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## 19. Heavy Metals Remediation in *Withaniasomnifera* (L.) Dunal on the Content of Chlorophyll Pigments

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### Abstract

Content of chlorophyll pigments were examined in fresh leaf of plants were grown in pot culture experiments with control, treatment I & II, a control (without any addition of either the heavy metals or calcium hydroxide to the soil), Treatment I (Cadmium 10ppm, Chromium 20ppm, Nickel 16ppm) were introduced into the soil, Treatment II (1 % of calcium hydroxide was also added along with heavy metals to soil) then plants were grown up to the productivity levels. High content of chlorophyll was observed in the leaves of *Withaniasomnifera*(L.) Dunal at maturity stage i.e., 30<sup>th</sup> to 40<sup>th</sup> day in different treatments. In all the treated plants chlorophyll content increased in growth periods 10, 20, 30 days and reduced in post maturation period of 40, 50, 60 days. The chlorophyll pigments (chl a, chl b and total chls) was reduced in Treatment No. I plants when compared to control plants and Treatment No. II plants. Treatment with 1% of calcium hydroxide reduced the effect of heavy metals on the content all chlorophyll pigments.

**Key words:** *Withaniasomnifera*(L.) Dunal, Heavy metals, Chlorophyll

### Introduction

*Withaniasomnifera* (L.) Dunal belonging to family Solanaceae is an important medicinal plant used in traditional Indian system of medicine through the restoration of a healthy balance of life force (Sharma, 1983; Shukla and Thakur, 1991). Several studies concerning the chemistry and pharmacology (Gamohet *al.*, 1984), novel method to isolate withaferin A (Kannan and

Kulandaivelu, 2007) and phytochemical variability in commercial herbal products (Sangwanet *et al.*, 2004) have been carried out.

Stress effects on plants include changes in leaf pigments, altered physiology (impaired photosynthesis), ultimately poor growth, less vigor, and sometimes even death (Larcher, 1995). The yield reduction is mediated through reduced leaf growth and consequently lower photosynthetic productivity (Chen *et al.*, 1993). Drought affects nearly all the plant growth processes depending on the intensity, rate and duration of exposure and the stage of crop growth (Braret *et al.*, 1990).

Several studies of this plant indicate that it possesses anti-inflammatory, antitumor, antistress, antioxidant, immunomodulatory, hematopoietic and rejuvenating properties besides its positive influence on the endocrine, cardiopulmonary and central nervous system (Ghosalet *et al.*, 1989; Bhattacharya *et al.*, 1995; Mishra *et al.*, 2000). Especially in plant tissues, up to 80 % of iron is found in the chloroplasts (Hansch and Mendel, 2009). But iron is toxic when it accumulates to high levels. It can act catalytically via the Fenton reaction to generate hydroxyl radicals, which can damage lipids, proteins and DNA, all of which could lead to growth inhibition (Li *et al.*, 2012).

Drought affects nearly all the plant growth processes depending on the intensity, rate and duration of exposure and the stage of crop growth (Brar,*et al.*, 1990). Proteins are important constituents of the cell that are easily damage in environmental stress condition (Prasad, 2002; Wu, *et al.*, 2005; Chen, *et al.*, 2000; Singh, *et al.*, 2007). The phytochemical activity at PS2 and electron requirement for photosynthesis, and ultimately to increased susceptibility to photodamage (Flagella, *et al.*, 1998).

## Material And Methods

### i) Plant material and design of experiment

Experimental Plants were grown in pot culture experiments with three treatments in black soil, Treatment No I, a control without any additions to the soil, Treatment No II Cadmium 10ppm, Chromium 20ppm, Nickel 16ppm were introduced into the soil, Treatment No III, one % of Calcium hydroxide was also added along with heavy metals to soil and were grown up to the productivity levels. All the experiments were grown in earthen pots at Green house of Botanical Garden, Department of Botany, Osmania University, Hyderabad, Telangana State.

### ii) Estimation of chlorophyll pigments

Chlorophyll pigments were extracted and estimated according to the method of Arnon (1949). 200 mg of fresh leaf material was taken in a clean mortar and homogenized with pestle

using 80% (v/v) acetone. The green slurry was centrifuged at 40000 rpm for 10 minutes. The supernatant was transferred to a 25 ml volumetric flask. The residual pigments were re- extracted using small amounts of 80% acetone and centrifuged. The supernatant was transferred to the volumetric flask. The extraction was repeated till complete white residue was obtained. The combined chlorophyll extracts were up to 25 ml with 80% acetone. The optical density was recorded at 645nm and 663 nm against 80% (v/v) acetone as blank in UV- 160A UV Visible Recording Spectrometer, Shimadzu.

The amount of chlorophyll present in the pigment extract was determined employing the Following formulae:

$$\text{Chlorophyll 'a'} = ((\text{OD}_{663} \times 12.7) - (\text{OD}_{645} \times 2.69)) \times V / (1000 \times W)$$

$$\text{Chlorophyll 'b'} = ((\text{OD}_{645} \times 22.9) - (\text{OD}_{663} \times 4.68)) \times V / (1000 \times W)$$

$$\text{Total Chlorophyll 'a'} = ((\text{OD}_{645} \times 20.2) + (\text{OD}_{663} \times 8.02)) \times V / (1000 \times W)$$

Where V - Volume of the pigment extract

W - Weight of the leaf material in grams.

## Result and Discussion

### 1 Analysis of chlorophyll content in 10 days of old leaves unmaturred

**1.1 Chlorophyll a:** The chlorophyll a content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.98 \pm 0.05$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.79 \pm 0.01$  mg/gmFW, and in plants grown with heavy metal +1%  $\text{Ca}(\text{OH})_2$  treated soil was  $0.93 \pm 0.01$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t = 17.146$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1%  $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t = 29.50$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%  $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t = 8.50$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll a content was increased in control plants when compared to heavy metal treated (Treatment No. I) plants and heavy metal + 1% calcium hydroxide treated (Treatment No. II) plants.

**1.2 Chlorophyll b:** The chlorophyll b content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.41 \pm 0.01$  mg/gm FW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.27 \pm 0.1$  mg/gmFW, and in plants grown with heavy metal +1%  $\text{Ca}(\text{OH})_2$  treated soil was  $0.34 \pm 0.09$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t = 2.585$ ,  $df = 10$ ,  $P < 0.05$ ). The difference

between the mean values of control plants and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=0.172$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=1.33$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll b content was increased in control plants when compared to heavy metal treated (Treatment No. I) plants and heavy metal+ 1% calcium hydroxide treated (Treatment No. II).

**1.3 Total chlorophyll:** The total chlorophyll content in the leaves of *Withaniasomnifera*(L.) Dunal was  $1.39 \pm 0.01$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $1.06 \pm 0.01$  mg/gmFW, and in plants grown with heavy metal +1% Ca(OH)<sub>2</sub> treated soil was  $1.27 \pm 0.06$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t=8.620$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1% Ca(OH)<sub>2</sub> treated plants were found significant ( $t=16.035$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=3.54$ ,  $df = 10$ ,  $P < 0.05$ ). The total chlorophyll content was increased in control plants when compared to heavy metal treated (Treatment No. I) plants and heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants.

## 2 Analysis of chlorophyll content in 20 days of old leaves unmaturred

**2.1 Chlorophyll a:** The chlorophyll a content in the leaves of *Withaniasomnifera*(L.) Dunal was  $1.21 \pm 0.01$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.80 \pm 0.01$  mg/gmFW, and in plants grown with heavy metal +1% Ca(OH)<sub>2</sub> treated soil was  $1.02 \pm 0.01$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t= 22.135$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1% Ca (OH)<sub>2</sub> treated plants were found significant ( $t=39.21$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t= 18.341$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll a content was reduced in heavy metals treated (Treatment No. I) plants when compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

**2.2 Chlorophyll b:** The chlorophyll b content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.68 \pm 0.01$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.62 \pm 0.1$  mg/gmFW, and in plants grown with heavy metal +1% Ca(OH)<sub>2</sub> treated

soil was  $0.64 \pm 0.02$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t=9.374$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=12.80$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=6.122$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll b content was reduced in heavy metals treated (Treatment No. I) plants when compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

**2.3 Total chlorophyll:** The total chlorophyll content in the leaves of *Withaniasomnifera*(L.) Dunal was  $1.89 \pm 0.01$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $1.42 \pm 0.01$  mg/gmFW, and in plants grown with heavy metal +1% Ca(OH)<sub>2</sub> treated soil was  $1.66 \pm 0.01$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t=25.818$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=44.632$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=22.90$ ,  $df = 10$ ,  $P < 0.05$ ). The total chlorophyll content was reduced in heavy metals treated (Treatment No. I) plants when compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

### 3 Analysis of chlorophyll content in 30 days of old leaves at matured

**3.1 Chlorophyll a:** The chlorophyll a content in the leaves of *Withaniasomnifera*(L.) Dunal was  $1.49 \pm 0.01$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $1.01 \pm 0.01$  mg/gmFW, and in plants grown with heavy metal +1% Ca(OH)<sub>2</sub> treated soil was  $1.08 \pm 0.01$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t= 8.79$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=6.99$ ,  $df=10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t= 8.27$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll ac ontent was reduced in heavy metals treated (Treatment No. I) plants when compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

**3.2 Chlorophyll b:** The chlorophyll b content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.95 \pm 0.01$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.77 \pm 0.01$  mg/gmFW, and in plants grown with heavy metal +1%  $\text{Ca}(\text{OH})_2$  treated soil was  $0.936 \pm 0.04$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t= 5.889$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1% $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t=7.066$ ,  $df=10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1% $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t= 20.55$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll b content was reduced in heavy metals treated (Treatment No. I) plants when compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

**3.3 Total chlorophyll:** The total chlorophyll content of the leaves of *Withaniasomnifera*(L.) Dunal was  $2.44 \pm 0.03$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $1.78 \pm 0.02$  mg/gmFW, and in plants grown with heavy metal +1%  $\text{Ca}(\text{OH})_2$  treated soil was  $2.01 \pm 0.05$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t=15.70$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1% $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t=22.294$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1% $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t=27.596$ ,  $df = 10$ ,  $P < 0.05$ ). The total chlorophyll content was reduced in heavy metals treated (Treatment No. I) plants when compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

#### 4 Analysis of chlorophyll content in 40 days of old leaves after maturation

**4.1 Chlorophyll a:** The chlorophyll a content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.68 \pm 0.08$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.60 \pm 0.01$  mg/gmFW, and in plants grown with heavy metal +1%  $\text{Ca}(\text{OH})_2$  treated soil was  $0.64 \pm 0.1$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t= 0.519$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1% $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t=1.029$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1% $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t=0.462$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll a content was reduced in heavy metals treated (Treatment No. I) plants when

compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

**4.2 Chlorophyll b:** The chlorophyll b content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.272 \pm 0.01$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.223 \pm 0.01$  mg/gmFW, and in plants grown with heavy metal +1%  $\text{Ca}(\text{OH})_2$  treated soil was  $0.25 \pm 0.01$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t=2.320$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1%  $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t=4.171$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%  $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t=2.529$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll b content was reduced in heavy metals treated (Treatment No. I) plants when compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

**4.3 Total chlorophyll:** The total chlorophyll content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.951 \pm 0.02$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.84 \pm 0.01$  mg/gmFW, and in plants grown with heavy metal +1%  $\text{Ca}(\text{OH})_2$  treated soil was  $0.89 \pm 0.04$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t=2.53$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1%  $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t=5.268$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%  $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t=0.551$ ,  $df = 10$ ,  $P < 0.05$ ). The total chlorophyll content was reduced in heavy metals treated (Treatment No. I) plants when compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

## 5 Analysis of chlorophyll content in 50 days of old leaves after ready to fall (near senescence)

**5.1 Chlorophyll a:** The chlorophyll a content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.481 \pm 0.1$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.399 \pm 0.1$  mg/gmFW, and in plants grown with heavy metal +1%  $\text{Ca}(\text{OH})_2$  treated soil was  $0.416 \pm 0.1$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t= 1.00429$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1%  $\text{Ca}(\text{OH})_2$  treated plants were found significant ( $t=0.9837$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal



treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=0.796$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll a content was increased in control plants when compared to heavy metal treated (Treatment No. I) plants and heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants.

**5.2 Chlorophyll b:** The chlorophyll b content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.233 \pm 0.006$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.175 \pm 0.001$  mg/gmFW, and in plants grown with heavy metal +1% Ca(OH)<sub>2</sub> treated soil was  $0.189 \pm 0.002$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t= 15.833$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=8.2368$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=11.4017$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll b content was increased in control plants when compared to heavy metal treated (Treatment No. I) plants and heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants.

**5.3 Total chlorophyll:** The total chlorophyll content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.710 \pm 0.01$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.574 \pm 0.01$  mg/gmFW, and in plants grown with heavy metal +1% Ca(OH)<sub>2</sub> treated soil was  $0.603 \pm 0.1$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t=7.723$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=2.91$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=5.291$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll content was increased in control plants when compared to heavy metal treated (Treatment No. I) plants and heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants.

## 6 Analysis of chlorophyll content in 60 days of old leaves at falling stage (senescence)

**6.1 Chlorophyll a:** The chlorophyll a content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.388 \pm 0.1$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.358 \pm 0.1$  mg/gmFW, and in plants grown with heavy metal +1% Ca(OH)<sub>2</sub> treated soil was  $0.375 \pm 0.1$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t= 0.2082$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the

mean values of control plants and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=0.208$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=0.159$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll a content was reduced in heavy metals treated (Treatment No. I) plants when compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

**6.2 Chlorophyll b:** The chlorophyll b content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.191 \pm 0.009$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.134 \pm 0.004$  mg/gmFW, and in plants grown with heavy metal +1% Ca(OH)<sub>2</sub> treated soil was  $0.153 \pm 0.03$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t= 13.811$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=7.111$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=38.27$ ,  $df = 10$ ,  $P < 0.05$ ). The chlorophyll b content was reduced in heavy metals treated (Treatment No. I) plants when compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

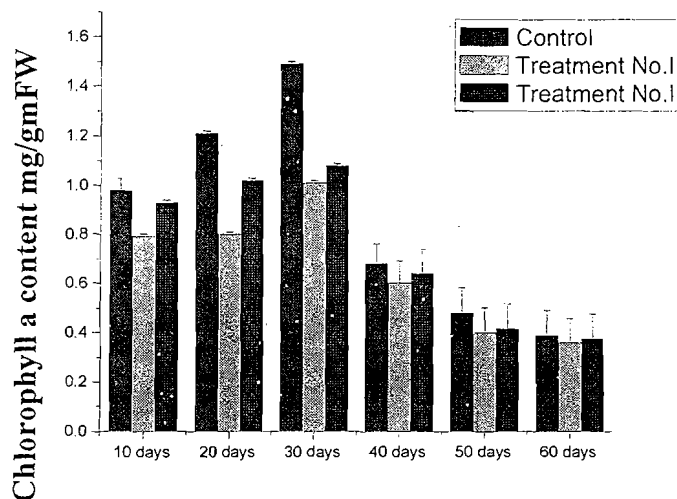
**6.3 Total chlorophyll:** The total chlorophyll content in the leaves of *Withaniasomnifera*(L.) Dunal was  $0.579 \pm 0.1$  mg/gmFW when plants were grown in control soil, the plants grown in heavy metal treated soil was  $0.492 \pm 0.03$  mg/gmFW, and in plants grown with heavy metal +1% Ca(OH)<sub>2</sub> treated soil was  $0.528 \pm 0.02$  mg/gmFW. The difference between the mean values of control plants and heavy metal treated plants differed significantly ( $t=1.654$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of control plants and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=1.167$ ,  $df = 10$ ,  $P < 0.05$ ). The difference between the mean values of heavy metal treated and heavy metal + 1%Ca(OH)<sub>2</sub> treated plants were found significant ( $t=3.3665$ ,  $df = 10$ ,  $P < 0.05$ ). The total chlorophyll content was reduced in heavy metals treated (Treatment No. I) plants when compared to heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants and control plants.

High content of chlorophyll was observed in the leaves of *Withaniasomnifera*(L.) Dunal maturity stage i.e 30 days in three treatments. All treatment plants increased chlorophyll content of duration periods 10, 20, 30 days and reduced the duration period of 40, 50, 60 days. The chlorophyll content was reduced in heavy metals treated (Treatment No. I) plants when compared

to control plants and heavy metal+ 1% calcium hydroxide treated (Treatment No. II) plants. Various abiotic stress decrease the chlorophyll content in plants (Ahmad, *et al.*, 2007). The pigments showed the metal interference with pigment metabolism (Mukherji and Maitra, 1976). In Cd treated plants, reduction occurred in chlorophyll of plants which is mainly connected to its biosynthesis (Stobar, *et al.*, 1985). Photo inhibition and photo destruction of pigments may contribute to such changes. In addition, the photosynthetic apparatus may show acclimation responses such as changes in the relative proportion of stacked and unstacked membrane domains (Anderson and Aro, 1994, Lepoitet *al.*, 1999, Qifuet *al.*, 2001).

**Table: -Content of chlorophylls in leaves of *Withaniasomnifera*(L.) Dunal plants grown in control and treatments I and II (mg/gm of plant material fresh weight)**

Treatment of duration	Control Plants			Heavy metals treated plants (Treatment No. I)			Heavy metal + Ca (OH) <sub>2</sub> treated plants (Treatment No. II)		
	Chl a	Chl b	Total Chlls	Chl a	Chl b	Total Chlls	Chl a	Chl b	Total Chlls
10 days	0.98±0.05	0.41±0.01	1.39±0.01	0.79±0.01	0.27±0.1	1.06±0.01	0.93±0.01	0.34±0.09	1.27±0.06
20 days	1.21±0.01	0.68±0.01	1.89±0.01	0.80±0.01	0.62±0.1	1.42±0.01	1.02±0.01	0.64±0.02	1.66±0.01
30 days	1.49±0.01	0.95±0.01	2.44±0.03	1.01±0.01	0.77±0.01	1.78±0.02	1.08±0.01	0.936±0.04	2.01±0.05
40 days	0.68±0.08	0.272±0.01	0.951±0.02	0.60±0.09	0.223±0.01	0.84±0.01	0.64±0.1	0.25±0.01	0.89±0.04
50 days	0.481±0.1	0.233±0.006	0.710±0.01	0.399±0.1	0.175±0.001	0.574±0.01	0.416±0.1	0.189±0.002	0.603±0.1
60 days	0.388±0.1	0.191±0.009	0.579±0.1	0.358±0.1	0.134±0.004	0.492±0.03	0.375±0.1	0.153±0.03	0.528±0.02



**Fig: -Content of chlorophyll a in the leaves of *Withaniasomnifera*(L.) Dunal plants in control and treatments I and II**

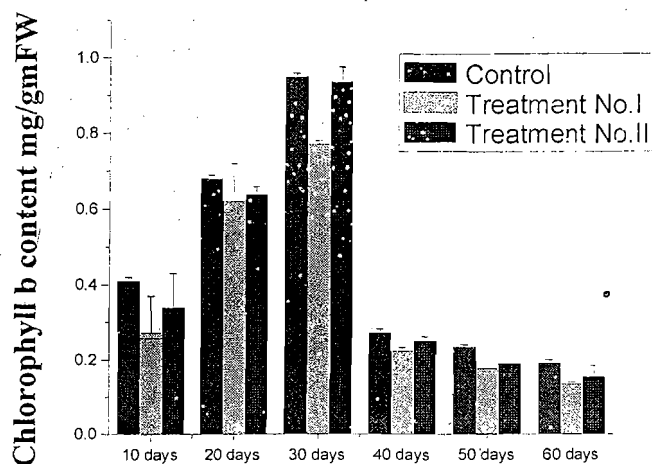


Fig: -Content of Chlorophyll b in the leaves of *Withaniasomnifera*(L.) Dunal plants in control and treatments I and II

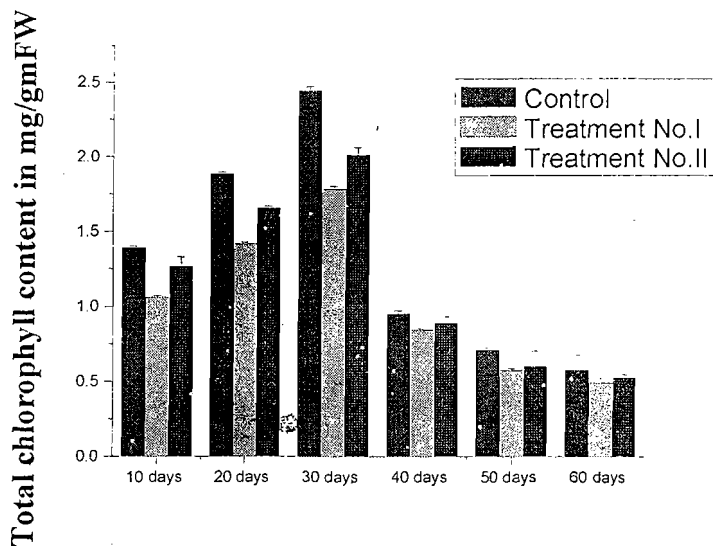


Fig: -Total chlorophylls in the leaves of *Withaniasomnifera*(L.) Dunal plants in control and treatments I and II

### Conclusions

Content of chlorophyll pigments (chl a, chl b and total chl) was reported high in all control plants when compared to treatment I and II. Treatment with 1% of calcium hydroxide reduced the effect of heavy metals on the content all chlorophyll pigments. Data suggested that content of chlorophyll pigments was increased at maturity stage.

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## 23. Plant used as Ethnomedecine by Gondi Tribe of Adilabad District, Telangana State

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### Abstract

The paper presents a detailed account of the use of the Twenty four of Fourteen Families as Ethno medicine for curing various ailments by the Gondi Tribe inhabiting Adilabad district of Telangana State

**Key words:** Ethno medicine, Gondi tribe, Adilabad District:

### Introduction

The present study deals with exploration of tribal knowledge on human medicinal plants used by tribals of Adilabad district, Telangana is one of the 31 districts of Telangana State. The District comprises mostly of forest occupying about forty per cent of the total geographical area with Most of area district represented by Dry deciduous Teak forest, Southern dry mixed deciduous forest and Dry deciduous Scrub forests and ranks second among all the districts in the state having forest cover and categorized as forests of Godavari valley. The data on medicinal plants used by various tribal communities has been collected during the past five years i.e., during January 2007 to December 2011, the author has surveyed 30 locations which includes Gudems and remote places at small habitations in deep forest areas, The study area representing under 10 Mandals viz., Bellampalli, Chinnur, Ichoda, Jaipur, Jannaram, Kerimeri, Sirupur(u), Tiryani, Utnoor and Wankidi Mandals of Adilabad district. The area under investigation was searched for medicinal plants used by the tribal communities like Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras of Adilabad district, particularly of their knowledge on "Art of healing" Since time immemorial human beings have been using plants for their survival and development. In the beginning they were food gatherers and hunters of food, but subsequently concentrated on plants that are useful for other purposes, such as for shelter, health care and artifact. The understanding of the use of plants for food, health care, shelter, agriculture and other purposes got accumulated over generations as traditional knowledge. Ethno botany is a distinct branch of natural science dealing with various aspects such as anthropology, archaeology, Botany.

ecology, economics, and medicine, religious, cultural and several other disciplines. There are several methods of ethno botanical research and those relevant to medicinal plants are archaeological search in literature, herbaria and the field studies. Ethno botany is usually defined as anthropological approach to Botany. The indigenous people of various regions have developed their own way of using plants for their health care and following their own culture, customs, folk songs and food habits. This knowledge is transferred through orally from one generation to another. People all over the world are still dependent on the traditional plant based healing practices as it is cheap and easily available. Rural people and tribal communities who live in the forest areas predominantly depend up on locally available medicinal plants to take care of their health and has become an integral part of their culture. Thus the accumulated diversified traditional knowledge has led to the dawn of a science called **Ethno botany**. Recently ethno-botanical studies have gained importance during recent years. In the present paper ethno botanical studies have been conducted on some plants of Adilabad district in Telangana State.

### **Materials And Methods**

Intensive field work was undertaken by the author for a period of five years from January 2007 to December 2011. Locally well-known herbal healers and poojaris belonging to Gonds, tribal community of the district who are still practicing traditional medicine are identified. The author has visited nearly 30 habitations belonging to Bellampalli, Chinnur, Ichoda, Jaipur, Jannaram, Kerimeri, Sirupur (u), Tiryani, Uttoor and Wankidi Mandals, the author has also visited villages and habitations like Gondugudem and Standard methods of botanical collection and techniques of herbarium preparations were followed as suggested by Jain and Rao (1977) and Khanna and Mudgal (1992). Plants have been collected in flowering and fruiting stages for the preparation of herbarium. Herbarium specimens were identified and accessed as per the norms laid down. The vouched specimens will be deposited in the Herbarium, Department of Botany, Osmania University, Hyderabad. Observations were made of the plant species with respect to their location and other field characters. The plant specimens were identified using district, regional and state floras like Flora of Adilabad District by Pullaiah *et al.* (1992), Flora of the Presidency of Madras by Gamble (1921) and other relevant literature. The approaches and methodologies described by Jain (1989) have been followed systematically for Ethno botanical enumeration of the herbal treatments recorded in the present study. The traditional healers who are practicing traditional medicine were interviewed from time to time to record the first-hand information. Information was gathered regarding plants or their parts, preparation of the medicine,



dosages. Ethno medicinal knowledge information gathered from Adilabad district is presented under three headings viz, plants used in Human ailments, Treatments for Human ailments were given according to the diseases recorded. Local terminology of disease names which have been described by healers are noted along with English names in the annexure. Other plant uses such as fodder, timber for house construction, decoration, food, dyeing and the plants used in worship, ceremonies like births, marriages, deaths and festivals were also noted. The plant species have been arranged alphabetically.

## ENUMARATION

S. N O	BOTANICAL NAME /FAMILY NAME	VERNACULAR NAME OR LOCAL NAME	PREPARATION/ADMINISTRATION	DISEASE/AILMENT
1.	<i>Acorus calamus</i> .L (Araceae)	Vasa	Dried rhizome chewed for treating sore throat, inflammation of tonsils and voice disorders.	voice disorders
2	<i>Achyranthes aspera</i> .L.(Amaranthaceae)	Uttereni	Leaves are eaten as food directly to cure fever.	Fever
3	<i>Aerva lanata</i> (L.) Juss.(Amaranthaceae)	Pindikura	Whole plant is ground to paste and applied on wounds.	Wounds
4	<i>Alangium salvifolium</i> (L.f.) Wang.(Alangiaceae)	Ooduga	100 gm of stem bark extract and 200 gm of leaf paste mixed together is applied as a plaster on the effected area.	Bone fracture
5	<i>Albizia lebeck</i> (L.) Willd. (Mimosaceae)	Dirisena	The root juice is extended by adding 3 – 4 pepper seeds, half cup of juice is given to drink by the patient and a little paste is also to be smeared on the bite spot.	Snake bite
6	<i>Balanites aegyptiaca</i> (L.) Del. (Balanitaceae)	Garachettu.	Fruit powder is given with milk once in a day until cure.	Cough and cold
7	<i>Bauhinia racemosa</i> Lam (Caesalpiniaceae)	Are	Young leaves are ground to paste and applied to lips and in mouth.	Mouth ulceration
8	<i>Boswellia serrata</i> Colebr.(Burseraceae)	Andugu	Stem bark of <i>Boswellia serrata</i> , Shonti, pepper in 2:1:1 ratio are ground together and extracted juice is given orally (10, ml) as a drink, three doses, for three days. (Diet: jowar roti with zinger garlic mirch for 10 days)	White discharge

9	<i>Calycopteris floribunda</i> Lam. (Combretace)	Bonta-tiga	Leaves are ground to make a fine paste and administered with butter to cure malarial fever	Fever:
10	<i>Chloroxylonswietenia</i> DC. (Rutaceae)	Billudu	Stem Bark powder is mixed with coconut oil and applied to hair and scalp to cure dandruff.	Dandruff
11	<i>Clerodendrum phlomidoides</i> L.f. (Verbinaceae)	Thakkali	Extract leaf juice addmishri and jeera powder and the same is given orally as a drink on Sunday, Tuesday and Fridays. (Diet: only curd rice on that day).	Fever
12	<i>Curculigoorchoides</i> Gaertn. (Hypoxidaceae)	Nelatadi	Tubers of <i>Curculigoorchoides</i> , leaves of <i>Hemidesmus indicus</i> , tubers of <i>Withania somnifera</i> are dried and powdered separately, equal parts of these powders put together, made in to globules and given twice in a day for 3-4 days. (Avoidences: Alcohol and sexual contact)	Sexual impotency
13	<i>Dichrostachys cinerea</i> (L.) Wt. & Arn. (Mimosaceae)	Velthuru	10 g stem bark extract of <i>Dichrostachys cinerea</i> and <i>Abutilon indicum</i> in water is given orally once in a day for a week.	Paralysis
14	<i>Emilia sonchifolia</i> (L.) DC. (Asteraceae)	Pisapatri	10 ml of stem bark juice is given internally to cure night blindness.	Night blindness
15	<i>Gardenia uliginosa</i> Retz (Rubiaceae)	Nallaika	Stem bark is soaked with egg yolk and turmeric, a dry clean cloth dipped in the extract and dressed around the part.	Bone Fracture
16	<i>Haldiniacordifolia</i> (Roxb.) Ridasd. (Rubiaceae)	Pasupukadamba	2 g of stem bark extract is given internally thrice in a day for two days.	Stomach ache
17	<i>Holoptelea integrifolia</i> (Roxb.) Planch. (Ulmaceae)	Nemlinara	50 ml stem bark juice is given internally thrice in a day for ten days.	Paralysis
18	<i>Leonotis nepetifolia</i> (L.) R.Br. (Lamiaceae)	Seeranta	Dried stem bark decoction is given orally until cure.	Fever
19	<i>Madhucal longifolia</i> avar. <i>latifolia</i> (Roxb.) A. Chev (Sapotaceae)	Ippa	Stem bark paste is warmed and applied.	Body pains
20	<i>Mucuna pruriens</i> (L.) DC. (Fabaceae)	Duldamma.	Whole plant is ground to paste and applied daily to remove Ectoparasites.	Meggot wounds
21	<i>Nymphaea pubescens</i> Willd. (Nymphaeaceae)	Kaluvapuvvu	20 g of dried rhizome powder mixed with honey is given orally early in the morning to cure jaundice.	Jaundice

22	<i>Oroxylum indicum</i> (L) Vent. (Bignoniaceae)	Dundillum,	2 spoons of stem bark decoction is given orally at night to regulate menstruation.	Menstrual complaints
23	<i>Pevettaindica</i> L. (Rubiaceae)	Papidi	Leaf decoction is used as lotion for ulcerated nose.	Ulcerated nose
24	<i>Strychnos nux-vomica</i> L. (Loganiaceae)	Vishamushti	10ml stem bark juice is given along with honey and ginger until cure.	Diarrhoea
25	<i>Tiliacora acuminata</i> (Lamk) Miers (Menispermaceae)	Kappa teega	Leaf paste is applied on the effected area.	Snake bite
26	<i>Vanda tessellata</i> (Roxb.) G. Don. (Orchidaceae)	Veduru Bada nika	The leaves are pounded and the paste is applied to the body to bring down fever.	Fever

### Results And Discussion

During survey of the Adilabad hills 26 species were found to be employed in various ailments relevant details have been compiled. Modern allopathic medicines used for the treatment of several ailments have great side effect and at times damage vital organ. The herbal medicine is cheaper with no fear of side effects; herbal remedies provide essential health care, which the village people of this region utilize to immense benefit. Although these remedies do not find esteem compared to modern medicine, their efficacy is claimed to be high. An in-depth study, mainly experimental with clinical efficacy of these drug preparations is essential in many cases. Mahua plant (*Madhuca indica* Gmel) is a huge tree in tropical India and it is also widely distributed in the entire district. Ethnic people treat this plant as "Kalpavrukshamu" and also considered as sacred.

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## **Medicinal Plants Biodiversity Of Anantagiri Hills In Vikarabad, Ranga Reddy District, Telangana State, India**

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### **ABSTRACT**

*India, a mega diverse nation, is one of the richest nations in terms of biological diversity. India owes this to its position in the tropical and subtropical latitudes. Forest is a natural ecosystem constituting an important, non-renewable living resource. Forest ecosystems of the world make up the Forest Biome, a vital terrestrial biomass producer and repository of biological diversity. Forest is a natural ecosystem constituting an important, non-renewable living resource. Forest ecosystems of the world make up the Forest Biome, a vital terrestrial biomass producer and repository of biological diversity. The major families which occupied first and second position were Mimosaceae-12sp Euphorbiaceae-9sp, and all 149 plant species belonging to 57 families were documented and authentically identified. The main aim of the survey is to prepare a ready check-list of medicinal plants present at and around Ananthagiri hills used by local herbalists and village folklore to cure various human and cattle ailments.*

**Keywords:** Biodiversity of Anantagiri Hills, Rangareddy District, Human medicine, Telangana.

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### **INTRODUCTION**

India, a mega diverse nation, is one of the richest nations in terms of biological diversity. India owes this to its position in the tropical and subtropical latitudes. India has a great diversity of natural ecosystems ranging from the cold and high Himalayan regions to the sea coasts; from the wet north-eastern green forests to the dry northwestern arid deserts; with different types of forests, wetlands, islands and the oceans. India consists of fertile river plains and high plateaus and several major rivers, including the Ganges, Brahmaputra and Indus. The diverse physical features and climatic situations have formed ecological habitats like forests, grasslands, wetlands, coastal and marine ecosystems and desert ecosystems, which harbor and sustain immense biodiversity. The country is also one of the 12 primary centers of origin of cultivated plants and domesticated animals. The largest number of the medicinal plants is known to occur in these tropical dry deciduous forests only. It is necessary that we should have full knowledge about the occurrence, frequency, distribution and phenology of various medicinal plants for their proper utilization. Jain (1978) emphasized the importance of survey of plant resources including medicinal plants, and opines that 'After independence our planners realized that in an agricultural country like India, where the flora is so varied and rich a proper consensus of the flora of the country and its evaluation for economic exploitation is very important.

Forest is a natural ecosystem constituting an important, non-renewable living resource. Forest ecosystems of the world make up the Forest Biome, a vital terrestrial biomass producer and repository of biological diversity. Forests have the potential for improving human well-being through supplementing income while functioning as safety nets (Angelsen & Wunder, 2003). Since forests play an important role in the sustainability of life on land, humans rightly resorted to reserve one third of the natural terrestrial plant cover. In view of the global forest decline, the UN has named 2011 as the 'International Year of Forests' in the 'Decade for Biodiversity'. Therefore, there is a need to study the local forests from the standpoints of nature and extent of their resource utilization. India is the seventh largest country in the world though it owns 1.8% of the global forests on the 2.5% of the global land area. To serve Gross

Domestic Product (GDP) as a measure of nation's wealth, not as mere measure of economic growth, India has initiated green accounting (Gundimeda, *et al.*, 2007). Three parameters are used to value the environmental resource wealth, namely (i) Timber, Non-Timber Forest Products (NTFPs) and carbon, (ii) Biodiversity, and (iii) Ecological services. With changing political economy of forest resources around the world, the benefits of NTFPs are increasingly discussed in valuing tropical forests (Tewari, 2000). In this regard, the diversity of NTFPs and their role in the sustenance of local people constitutes a prime concern. All biological materials that are found in the forests, excluding the timber, are called NTFPs. These include consumptive category of goods like wild food plants, spices, honey, oils, fodder, etc. on one hand and the non-consumptive items like gums, resins, gum-resins, dyes, wax, lac, brooms, fibers, fuel wood, charcoal, fencing, wildlife products, raw materials like bamboo, cane, etc. The forests in India, once known for their valuable timbers, are now looked at for their NTFPs, with a clear shift in the paradigm. The rural people (largely the scheduled tribe category) inhabiting the forests areas carry a very long history of extraction of NTFPs, for subsistence and/or sale. NTFPs have been identified as one of key income sources for rural households, with live examples indicating an income share greater than that from cash crops or informal cash incomes (Dovie, 2003). Forest is a living resource while extraction of its produce is a dynamic aspect, with spatial and temporal implications. Forest management policies are increasingly spatial while making the forest land towards resource protection (reserves, sanctuaries, parks, etc.) and extraction (buffer zones), recreation (ecotourism) opportunities, etc. (Robinson, *et al.*, 2008).

The present paper is aimed and planned to fulfill the lacuna of this information with regard to medicinal plants in this area the survey of the potentiality of the medicinal plants at and around Ananthagiri is beautiful hill are 6 km away from Vikarabad town of Ranga Reddy District of Telangana, which is 75 km from the Metropolitan city of Hyderabad.

#### **Study area**

The present surveyed area for medicinal plants at Ananthagiri Hills and its environs falls under Rangareddy District of T.S. which lies between 16<sup>o</sup>.30' and 18<sup>o</sup>.20' of North latitudes and 77<sup>o</sup>.30' of East longitudes. The total geographical area of the District is 7493 sq. kms with 1055 villages and 14 towns with a population of 25.52 lacks, and is most urbanized districts of T.S. The district has 37 mandals and 3 Revenue divisions. The district has a poor forest cover and consists of Ananthagiri, Mahammadabad, Gungurthy, Adikcherla, Mothkupally, Nagupalli, Raskam, Pashapur and Dharur reserve forests.

#### **Hill range**

The district is mostly hilly with poor forest cover (only 0.7% of the total area). The general slope of the land is from West to East and South-East. There are two major hill ranges viz., Ananthagiri hill range and Rajkonda hill range. The average elevation of the hills is 509.91m.

#### **Types of soils and minerals**

There are three major soil types in this region and comprises of red earths, loamy sands (Dubba), Sandy loams (chalka), and sandy-clay loam and black soils comprising clay loams, clays, silting clays etc., and the third type of soils of mixed nature, consisting of Quartz deposits followed by Felspar clay, amephyrat and laterite, at Tandur which is 36 kms. Away from study area and composes of rich lime stone deposits (containing 173 million tons) of high quality cement grade lime stone.

#### **Climate**

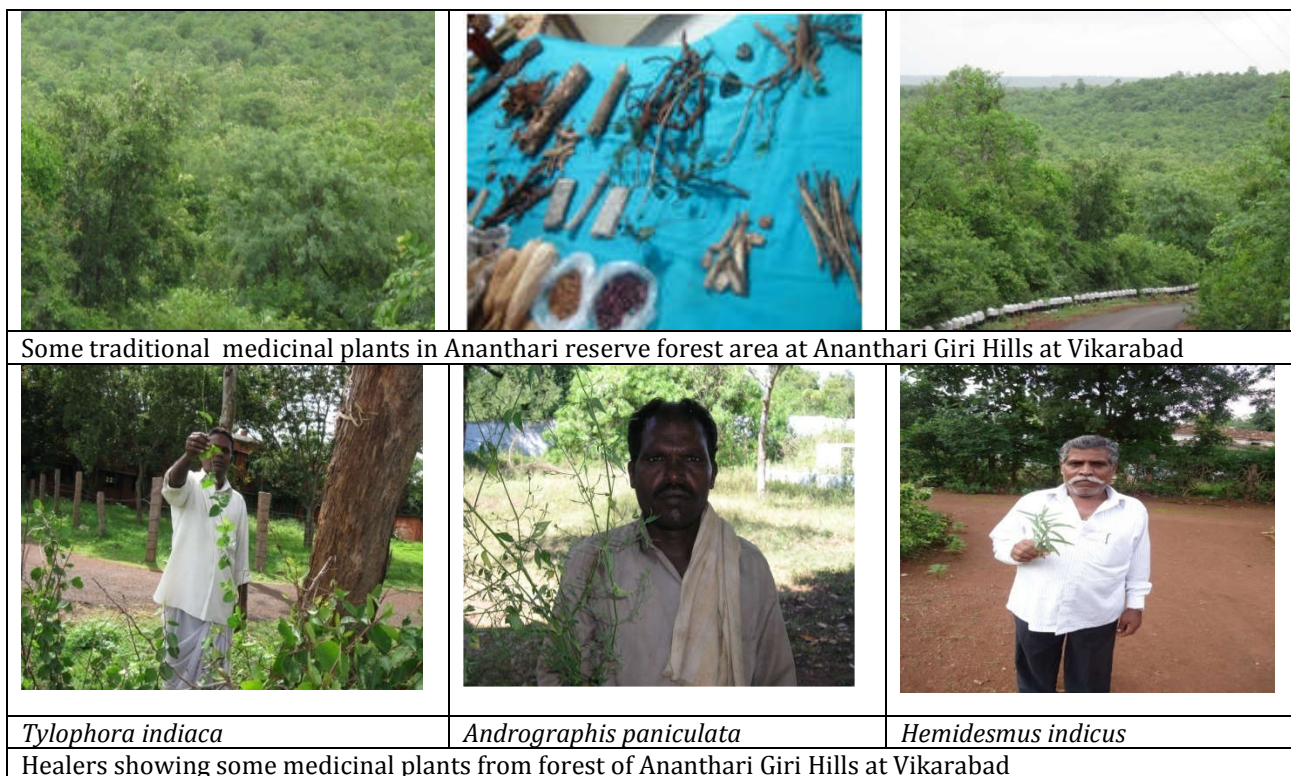
The climate is characterized by a hot summer of long duration and generally a dry weather, except during south-west monsoon season. The average annual rain fall is about 802mm. Which is comes from south-west monsoon during June to September. May is the hottest month with mean daily temperature at 40<sup>o</sup> C, however the temperature will come down during monsoon period. Decrease in temperature in day and night is seen during the month of December is the coldest month (13<sup>o</sup> C).

#### **Flora**

The flora of the district exhibits and xerophytic adaptations 42.5% of the land is under cultivation of various crops. The hills and the slopes are generally covered by dry deciduous forests. The forests are not of much value commercially the forest area comes about only 10% of the total land area. The high density of population resulted in stress, as the area is nearer to the capital city Hyderabad.

#### **Rivers**

The Musi is the chief river of the Rangareddy district and is also called as Muchikunda, which arise at near Ananthagiri hills at a place called as Bugga which is 2 kms. Away from Lord Anantha Padmanabha temple, the river flows Eastward via Vikarabad Mandal and passing though the Hyderabad metropolitan city, and enters into Nalgonda District and joins the River Krishna at Vadapally Village. Another small river is Kagna River, also rises in the hill range of Ananthagiri and flows to North-West wards and floods the entire Tandur Mandal.



**MATERIALS AND METHODS**

The work was undertaken for about a period two years starting from June' 2010 to the end of May' 2012. The work is mainly confined to Ananthagiri Hills and its environs covering about a radius of 35 kms, which comes under Vikarabad reserved forest. The main aim of the survey is to prepare a ready checklist of medicinal plants present at and around Ananthagiri hills used by local herbalists and village folklore to cure various human and cattle ailments. The areas covered are Ananthagiri hills particularly at Ananthapadmanabha temple and its surroundings, followed by villages of Ananthagiripalle, Godhumaguda, Kerelli, Dharur, Durgamchervu, Nagasanipalle Tanda, Mohammadanpalle, Velichala, Mothukupalle, (Reserved forest), Narsimhuni gutta, Gattukesaram, Kondapur and Ramaiahguda. The data presented here is collected by frequent field visits by the author to these areas once in two months for about a period of two years. The information's on medicinal properties of plants is gathered from various sources such as consulting the local village heads, elderly people, Vaidyas, and other herbal practitioners. Help from Forest department personnel including DFO-Vikarabad and his associates were taken during the survey.

**ENUMERATIONS**

In the enumeration, the family and taxons are arranged alphabetically. Ethno botanical uses of some medicinal plant parts used by tribes for some disease

<b>Acanthaceae</b>		
1.	<i>Adhatoda vasica</i> Nees	Leaves are ground with the flowers of <i>Hibiscus rosa-sinensis</i> and taken orally to treat asthma.
2.	<i>Andrographis paniculata</i> (Burm.f.)	Wallich ex Leaf paste is applied topically at the bitten site of snake; beetle and sorpion. Powdered leaf is mixed with cow or goat's milk and taken orally to treat diabetes.
3.	<i>Asystasia gangetica</i> (L.) T.Anderson	Leaf powder is mixed with coconut oil and applied topically to healwounds (burns).
4.	<i>Lepidagathis cristata</i> Willd	Presence of one plant in home in every sunday is good for health.
<b>Aizoaceae</b>		
1.	<i>Trianthema portulacastrum</i> L.	Decoction of roots is taken internally to treat Constipation and asthma.
<b>Alangiaceae</b>		
1.	<i>Alangium salvifolium</i> (L.f.) Wang	Fruits are eaten for loss of appetite for Anorexia. Stem bark extract and leaf paste are applied as plaster for bone fracture.
<b>Amaranthaceae</b>		

1.	<i>Achyranthes aspera</i> L	Leaf paste is applied topically to treat cuts and Wounds.
2.	<i>Aerva lanata</i> (L.) Juss. Ex Schult	Juice of whole plant is taken orally to treat cough, sore throat and wounds. Leaf juice is instilled in ears.
<b>Anacardiaceae</b>		
1.	<i>Buchanania lanzan</i> Spreng.	Gum and rice are pounded and the powder is administered for 3 or 4 days for chest pain.
2.	<i>Lannea coromandelica</i> (Houtt.) Merr.	Stem bark pounded with turmeric are bandaged over the affected part.
3.	<i>Mangifera indica</i> L.	The latex from leaf and stem bark is used to treat heel cracks.
4.	<i>Odina wodier</i> Roxb. Fl.	Juice of leaves is taken orally to prevent white discharge in women.
5.	<i>Semecarpus anacardium</i> L.	Seed resin is applied over dogbite.
<b>Annonaceae</b>		
1.	<i>Polyalthia longifolia</i> (Sonn.) Thwaites.	Juice extracted from the fresh stem bark is taken orally to treat indigestion.
<b>Apocynaceae</b>		
1.	<i>Anodendron paniculatum</i> (Roxb.) DC.	Bark extract is bandaged for bone fracture.
2.	<i>Catharanthus roseus</i> G. Don.	Whole plant is powdered and mixed with cow's milk and taken orally to treat diabetes.
3.	<i>Nerium oleander</i> Sol.	Juice prepared from the stem bark is boiled with gingelly oil and two drops are poured into ear to treat ear pain.
4.	<i>Rauwolfia tetraphylla</i> Linn.	Paste of the whole plant is mixed with castor oil and applied pically to treat skin diseases.
5.	<i>Wrightia tinctoria</i> (Roxb.) R.Br.	Juice of seeds taken orally to treat indigestion.
<b>Araceae</b>		
1.	<i>Acorus calamus</i> L.	Dried rhizome is ground in water and the paste is given orally to children for clarity of speech.
<b>Asclepiadaceae</b>		
1.	<i>Caralluma umbellate</i> Roxb.	Pulp of the young plants is applied over the burned parts.
2.	<i>Calotropis gigantean</i> (L.) R. Br.	Latex drops (3 or 5) mixed with sesame oil (2 spoons) are instilled in ears (2 or 3 drops).
3.	<i>Gymnema sylvestre</i> R. Br.	Leaf powder is mixed with cow's milk and taken rally to treat diabetes. The root powder is taken orally and also applied on the bittenspot to treat snake bite.
4.	<i>Hemidesmus indicus</i> Linn. R. Br. Muell.	Juice extracted from the whole plant is taken internally to keep the body cool. Root juice is given orally for blood purifier.
5.	<i>Holarrhena pubescens</i> (Buch. Ham.) Wall. Ex Don	A pinch of bark is placed in the mouth to relieve cough.
6.	<i>Tylophora indica</i> (Burm.f.) Merr	Root juice is given orally for Asthma
7.	<i>Wattakaka volubilis</i> Cooke.	Leaf paste is applied topically to treat rheumatic pain, cough and fever severe cold.
<b>Asteraceae</b>		
1.	<i>Blumea mollis</i> (D. Don) Merr.	Leaf smoke is inhaled for cough.
2.	<i>Eclipta prostrata</i> L	Leaf powder is mixed with coconut oil & applied on the hair regularly for healthy and black hair.
3.	<i>Sphaeranthus indicus</i> L.	Leaf, flower and seeds are ground into paste and applied topically to treat skin diseases and piles.
4.	<i>Tridax procumbens</i> L.	Leaf paste is applied topically on cuts and wounds
5.	<i>Xanthium strumarium</i> L.	Roots tied to get rid of the baneful (noxious) influence, as that of an evil eye.
<b>Bombacaceae</b>		
1.	<i>Bombax ceiba</i> L.	Bark extract is given orally to increase sperm count.
<b>Boraginaceae</b>		
1.	<i>Coldenia procumbens</i> L.	Juice of leaf is taken orally to prevent white discharge in women.
2.	<i>Heliotropium indicum</i> L.	Paste of whole plant is applied topically to treat wounds and skin affections.
<b>Burseraceae</b>		
1.	<i>Boswellia serrata</i> Coleb.	Gum is applied over the bitten area for dog bite.
<b>Caesalpiniaceae</b>		
1.	<i>Cassia absus</i> L.	Seeds are ground into paste and applied topically to treat skin diseases and headache.
2.	<i>Cassia auriculata</i> L.	Flowers are crushed and mixed with goat's milk and taken orally to prevent white discharge in women and seed powder with honey is taken orally for diabetes.
3.	<i>Cassia occidentalis</i> L.	Leaf paste is applied topically to treat scabies and to heal bone



		fractures.
4.	<i>Tamarindus indica</i> L.	Dried fruits are taken orally to treat eye infections and fruit pulp is applied externally on affected part once daily till cured for cracked sole.
<b>Capparaceae</b>		
1.	<i>Capparis sepiaria</i> L.	Bark and neem bark (1:4) are crushed and the extract is given orally for 2 days after menstruation for contraceptive.
2.	<i>Capparis zeylanica</i> L.	Root bark is ground with water, boiled and taken orally to treat indigestion and also roots made into an amulet; it is believed to infuse occult powers (Evil spirit).
3.	<i>Cleome viscosa</i> L.	Leaf paste is applied topically to heal wounds.
<b>Celastraceae</b>		
1.	<i>Cassine glauca</i> (Roxb.) O. Kuntze	Roots tied to wrist to keep-off evil spirits.
<b>Combretaceae</b>		
1.	<i>Anogeissus latifolia</i> (Roxb. Ex DC.) Wall. Ex Guill. & Perr.	Bark extract (4 tea spoons) along with pepper (2 tea spoons) is given twice a day for 10 to 15 days for asthma.
2.	<i>Terminalia arjuna</i> Roxb.Ex. Dc Wight & Arn.	Fruit paste is applied topically on wounds. Bark powder is boiled with water and inhaled to cure headache to kill worms in teeth. One tea spoon powder is given with one glass of water or cow/goat milk for three months for anaemic. Stem bark extract is given daily to strengthening the heart functions as a cardiac tonic.
3.	<i>Terminalia bellerica</i> (Gaertn) Roxb.	One tea spoonful seed powder is given with sugar or honey thrice a day for two days for Stomach pain.
<b>Convolvulaceae</b>		
1.	<i>Canavalia virosa</i> (Roxb.) Wt. & Arn.	Leaves extract is applied on the affected part once daily for three days for ring worm.
2.	<i>Merremia emarginata</i> (Burm.f.) Hall.f.	Decoction of the whole plant is taken internally to treat stomach problems.
<b>Cucurbitaceae</b>		
1.	<i>Coccinia grandis</i> (L.) J. Voigt	Leaf Juice is mixed with butter and applied topically to treat skindiseases. Leaf paste is applied to cuts and wounds.
2.	<i>Mukia maderaspatana</i> (L.) M. Roemer	Leaf powder is mixed with boiled rice and taken orally to treat cold and cough.
<b>Cyperaceae</b>		
1.	<i>Cyperus rotundus</i> L.	Paste of dried tuber is applied on breast of women to secrete more milk and applied topically on bitten site of scorpion.
2.	<i>Scleria corymbosa</i> Roxb.	Root juice is given orally for blood purifier.
<b>Dilleniaceae</b>		
1.	<i>Dillenia pentagyna</i> Roxb	Stem bark pounded with ginger and peppers are applied as bandage.
<b>Ebenaceae</b>		
1.	<i>Diospyros peregrine</i> (Gaertn.)	Barke extract is taken orally for asthma
<b>Euphorbiaceae</b>		
1.	<i>Acalypha indica</i> L.	Leaves with salt and turmeric are ground to powder and mixed with sesame oil, applied on the patches of ring worm infection. Leaf paste is applied topically to treat skin diseases.
2.	<i>Chamaesyce hirta</i> (L.) Small	Whole plant is pounded with salt and turmeric and applied as cream for boils, blisters & cuts.
3.	<i>Drypetes roxburghi</i> (Wall.) Hurusawa	Bark extract is given orally for cough.
4.	<i>Euphorbia antiquorum</i> Linn	Dried latex is taken internally in low dose to help free motion.
5.	<i>Euphorbia hirta</i> L.	The milky latex is applied topically to treat wounds and lip cracks.
6.	<i>Euphorbia tirucalli</i> L.	The stem is boiled with water and given to children to treat skin diseases.
7.	<i>Phyllanthus amarus</i> Schum. & Thnn.	Fresh leaves are ground and mixed with a cup of cow or goat's milk and taken internally to cure jaundice.
8.	<i>Phyllanthus emblica</i> L.	Fruit powder is mixed with cow's or goat's milk and taken orally to treat cold and cough.
9.	<i>Ricinus communis</i> L.	The leaf juice is taken orally or washed leaves are tied on the breast to increase secretion of milk in women. The oil prepared from the seeds is applied on lower stomach to get relief from stomachache.
<b>Fabaceae</b>		
1.	<i>Abrus precatorius</i> Linn.	Root powder is taken orally along with cow's milk to treat scorpion sting and snakebite.
2.	<i>Abutilon indium</i> (L.) Sweet.	Leaf paste is applied over the spot of scorpion sting.
3.	<i>Acacia catechu</i> (L.f.) Willd.	The stem bark of <i>Acacia catechu</i> and tips of <i>Holoptela integrifolia</i> are

		ground to paste and applied on the wounds for eight days.
4.	<i>Acacia nilotica</i> (L.) Del	Dried stem bark powder mixed with camphor and ghee applied on wounds.
5.	<i>Clitoria ternatea</i> L.	Root powder is mixed with water and taken orally to treat indigestion, eye diseases and headache.
6.	<i>Pongamia pinnata</i> (L.) Pierre.	Juice of root is mixed with equal amount of coconut milk, boiled and applied topically to cure wound and gastric trouble.
7.	<i>Trigonella foenum-graecum</i> L.	Five gram of seeds is chewed to cure diarrhoea twice daily for two days.
<b>Flacourtiaceae</b>		
1.	<i>Flacourtia indica</i> (Burm.f.) Merr.	Bark juice is boiled in gingelly oil and the worm extract is applied to cuts.
<b>Gentianaceae</b>		
1.	<i>Enicostemma axillare</i> (Lam.) Royle	Whole plant is pounded and applied to boils.
<b>Hypoxidaceae</b>		
1.	<i>Curculigo orchoides</i> Gaertn	Tubers are dried and powdered and one teaspoonful is taken orally with milk one every day for aphrodisiac.
<b>Lamiaceae</b>		
1.	<i>Coleus aromaticus</i> Benth.	Leaf juice is taken orally by children to treat indigestion and cough.
2.	<i>Leucas aspera</i> (Willd.) Link.	A bunch of leaves is boiled and the vapour is inhaled to cure headache and fever.
3.	<i>Ocimum sanctum</i> L.	Tulsi Leaves are crushed with onion bulbs and the juice is taken orally to treat cough, cold and headache.
<b>Lauraceae</b>		
1.	<i>Cinnamomum verum</i> Presl.	Decoction of stem bark is taken internally to treat cough, dysentery and to keep the body cool.
2.	<i>Litsea glutinosa</i> (Lour.) C.B. Robins	Bark juice is taken orally for maternal pain.
<b>Lecythydaceae</b>		
1.	<i>Careya arborea</i> Roxb.	Infusion of flowers is given after childbirth to heal ruptures.
<b>Liliaceae</b>		
1.	<i>Aloe vera</i> L.	Sap mixed with oil is heated and the mixture is applied on hair for hair growth and good sleep.
2.	<i>Asparagus gonocladus</i> Baker	Tuber is eaten for fertility.
3.	<i>Gloriosa superb</i> L.	Bulbare pounded with garlicin goat milk given in early pregnancy
4.	<i>Smilaxperfoliata</i> Lour	One tea spoonful juice of tubers is taken orally before sleeping.
5.	<i>Sanservieria roxburghiana</i> Schult.	Juice of warmed leaf is poured into ear to treat ear pain.
<b>Loganiaceae</b>		
1.	<i>Strychnos nux-vomica</i> L.	One table spoon (Bark extract) is given along with honey and ginger for dysentery.
<b>Lythraceae</b>		
1.	<i>Lawsonia inermis</i> L.	Leaf powder is mixed with coconut oil and applied topically to treat cuts and wounds.
2.	<i>Woodfordia fruticosa</i> (L.) Kurz.	Flowers are pounded in cow milk for blood purifier.
<b>Malvaceae</b>		
1.	<i>Abutilon indicum</i> L.	Leaf juice and root are taken orally to treat dental problems.
2.	<i>Hibiscus rosa-sinensis</i> L.	Paste of fresh leaves is applied on the hair for healthy and black hair.
3.	<i>Sida acuta</i> Burn.	Arival manai poondu Leaf paste is applied topically to heal cuts, wounds and to get relief from headache.
<b>Meliaceae</b>		
1.	<i>Azadirachta indica</i> A. Juss.	Leaf paste is applied topically on the body to treat small pox, rheumatism and skin diseases. The young twigs are used as toothbrush to develop strong teeth.
<b>Menispermaceae</b>		
1.	<i>Tinospora cordifolia</i> Miers.	Leaf paste is applied topically to treat wounds.
<b>Mimosaceae</b>		
1.	<i>Acacia chundra</i> (Roxb. Ex Rottl.) Willd.	Stem bark extract (1 tablespoonful) is administered with goat milk for 4 days, with a day gap after every dose for asthma. Bark is kept in the home for get rid of fear (Evil spirit).
2.	<i>Acacia farnesiana</i> (L.) Willd.	Fruit powder is given orally with milk for dogbite.
3.	<i>Acacia leucophloea</i> (Roxb.) Willd	Paste of fresh stem bark is applied topically to treat cuts and wounds.
4.	<i>Acacia nilotica</i> (L.) Willd. Ex Del.	Bark powder is applied along with oil for burns.
5.	<i>Acacia pennata</i> (L) Willd.	Stem bark along with that of <i>Semecarpus anacardium</i> (each 100 g)

		are pound and the extract is given orally for 3 days for fits (Somma, Murcha)
6.	<i>Dichrostachys cinerea</i> Wight & Arn.	Leaf paste is applied to cuts.
7.	<i>Mimosa hamata</i> Willd.	Bark extract pound in cows' milks along with garlic is advised to men thrice a day for 3 days for increase in potency.
8.	<i>Mimosa pudica</i> L.	Leaf paste is applied topically to treat cuts and wounds. Root extract (2 spoons) given once a day for two days for diarrhoea.
9.	<i>Ficus benghalensis</i> L.	Stem latex is applied topically on heel cracks. Young stem is used as tooth brush.
10.	<i>Ficus racemosa</i> L.	Stem latex is applied topically to treat heel cracks.
11.	<i>Ficus religiosa</i> L.	Leaf powder is mixed with water and taken orally to get relief from body pain.
12.	<i>Xylia xylocarpa</i> (Roxb.) Taub	With roots tied to hand, one can move in the forests, even at night, without the fear of evil spirits.
<b>Moringaceae</b>		
1.	<i>Moringa concanensis</i> Nimmo ex Dalz. & Gibs.	Stem bark extract (2 spoonfuls) is administered with sugar for 4 days for cough.
2.	<i>Moringa oleifera</i> Lam.	The leaf is taken as food and it reduces body heat and to treat indigestion and eye diseases. Flower is taken as food and it gives chillness to eyes and increases sperm production in men.
<b>Myrtaceae</b>		
1.	<i>Syzygium cumini</i> (L.)	Paste of stem bark is applied topically to treat swellings. The ripe fresh fruits are taken orally to reduce body heat.
<b>Nyctaginaceae</b>		
1.	<i>Boerhaavia diffusa</i> L.	Root paste is applied topically to treat hydrocele.
<b>Orchidaceae</b>		
1.	<i>Vanda tessellate</i> (Roxb.) Hook. Ex G.Don.	Extract of white (velamen) roots (1 spoon) given once a day for 3 days for dysentery.
<b>Periploaceae</b>		
1.	<i>Sarcostemma acidum</i> (Roxb.) Voigt.	Columns grounded in goat milk and put as band for bone fracture.
<b>Plumbaginaceae</b>		
1.	<i>Plumbago zeylanica</i> L.	Root pound with garlic in milk is given to children for fits (Somma, Murcha).
<b>Poaceae</b>		
1.	<i>Cynodon dactylon</i> L. Pers.	Decoction of whole plant is taken orally to keep the body cool.
<b>Rhamnaceae</b>		
1.	<i>Zizyphus mauritiana</i> Lam.	Leaf and bark decoction is boiled and it is used to take bath to treat severe body pain. Dried bark powder is applied topically to treat wounds.
2.	<i>Zizyphus rugosa</i> Lam.	Leaf paste is bandaged for bone fracture.
<b>Rubiaceae</b>		
1.	<i>Cerisoides turgid</i> (Roxb.) Tirveng.	Bark juice is administered for diarrhoea.
2.	<i>Chomelia asiatica</i> (L.) Kuntze.	Root juice along with garlic is instilled in nose for fits (Somma, Murcha).
3.	<i>Hymenodictyon orixense</i> (Roxb.) Mabb.	Bark juice is bandaged for bone fracture.
4.	<i>Morinda tinctoria</i> Roxb.	Leaf juice is given orally to children before food for easy digestion.
5.	<i>Oldenlandia umbellata</i> L.	The root paste is applied topically to arrest bleeding.
6.	<i>Spermacoce hispida</i> L.	The seeds are crushed into paste and taken orally to treat stomach problems.
<b>Rutaceae</b>		
1.	<i>Aegle marmelos</i> Corr.ex.Roxb	Leaf paste is applied topically to heal wounds. The pulp of fruit is given with water to children suffering with dysentery.
2.	<i>Citrus aurantifolia</i> (Christm.) Swingle. L.	Decoction of leaves is inhaled to get relief from fever, headache and cold.
3.	<i>Murraya koenigii</i> (L.) Sprengel	Juice of tender leaves is taken orally to arrest vomiting.
4.	<i>Toddalia asiatica</i> (L.) Lam.	Leaf paste is applied along with pepper for boils, blisters & cuts.
<b>Sapindaceae</b>		
1.	<i>Cardiospermum halicacabum</i> L.	Root is boiled with oil and applied on head before bath to treat throat infection and headache.
2.	<i>Dodonaea viscosa</i> (L.) Jacq.	Leaves pounded with turmeric are bandaged over the affected part of bone fracture.

3.	<i>Schlelichera oleosa</i> (Lour.) Oken:	Stem bark extract is applied over the chest twice a day till relieved of pain.
<b>Solanaceae</b>		
1.	<i>Datura metel</i> L.	Few drops of leaf juice is poured into ear to treat earache.
2.	<i>Solanum nigrum</i> L	Whole plant parts are taken as food to treat cough.
3.	<i>Solanum surattense</i> Burm.f	Root extract (1 tablespoon) is given orally after 3 days of menstruation for 5 or 6 days for fertility.
4.	<i>Solanum torvum</i> Sw.	Leaf juice is taken orally to reduce body heat.
5.	<i>Solanum trilobatum</i> L.	Unripe fruits are prepared as curry or roasted in gingelly oil and taken orally along with food to strengthen the body. The leaf juice is taken orally to treat cough and itching.
6.	<i>Withania somnifera</i> (L.) Dunal	Juice of tuber and milk is advised for females with no children.
<b>Sterculiaceae</b>		
1.	<i>Melochia corchorifolia</i> L.	Boiled leaf is taken as food to help in free motion.
<b>Tiliaceae</b>		
1.	<i>Grewia hirsute</i> Vahl	Roots are pounded and applied over for boils, blisters & cuts.
<b>Ulmaceae</b>		
1.	<i>Holoptelia integrifolia</i> (Roxb.) planch	Bark juice (1/2 glass) is given twice a day for a week.
<b>Verbenaceae</b>		
1.	<i>Clerodendrum inerme</i> (L.)	Leaf is ground in water and the juice is taken orally to treat fever.
2.	<i>Lantana camara</i> L.	A handful of flower is ground with coconut oil and applied topically on the head to get relief from headache.
3.	<i>Lippia nodiflora</i> Mich.:	Paste of leaves is applied topically to treat swellings and wounds.
4.	<i>Stachytarpheta jamaicensis</i> Vahl.	Paste of stem and root bark is applied topically to treat dysentery.
5.	<i>Tectona grandis</i> L.f	Leaf juice (200 g) and honey (100 g) are mixed and taken every day with milk for 40 days for elephantiasis.
6.	<i>Vitex negundo</i> L.	Leaves are boiled in water and the vapour is inhaled twice a day to get relief from headache, fever, cold, and cough.
<b>Violaceae</b>		
1.	<i>Hybanthus enneaspermus</i> (L) Muell	Paste of whole plant is applied topically to treat cough. Whole plant dried and powdered. One teaspoonful is taken orally with milk every day twice for Aphrodisiac.
<b>Vitaceae</b>		
1.	<i>Cissus quadrangularis</i> L	Paste of stem is taken orally for easy digestion. Tender internodes and leaves are pickled and eaten for Anorexia.
2.	<i>Ampelocissus latifolia</i> (Roxb.) Planch	200 ml of stem juice is administered orally once a day for 2 days for Anorexia
<b>Zingiberaceae</b>		
1.	<i>Costus speciosus</i> (Koenig) Smith	Rhizomes are pound and 1 teaspoonful of juice is taken orally by tribals for abortion.
2.	<i>Zingiber officinalis</i> Rosc.	5ml extract of fresh rhizome is given internally in the early morning for 3 days for cough. One gram rhizome is decocted along with 2 g of <i>Piper nigrum</i> 10g root bark of <i>Plumbago zeylanica</i> , 1 seed of <i>Semecarpus anacardium</i> in half litre water, 20 ml decoction is given internally by adding tea spoonful of cow ghee once daily for 3 days for Sexually transmitted disease.
<b>Zygophyllaceae</b>		
1.	<i>Tribulus terrestris</i> L.	The fruit and root are mixed with boiled raw rice, taken orally to prevent white discharge in women and to treat urinary troubles. Ground 10 g seeds with 10 g dry roots of <i>Withania somnifera</i> to make powder. One tea spoonful powder is given internally daily with milk during bed time for 30 days for impotency.

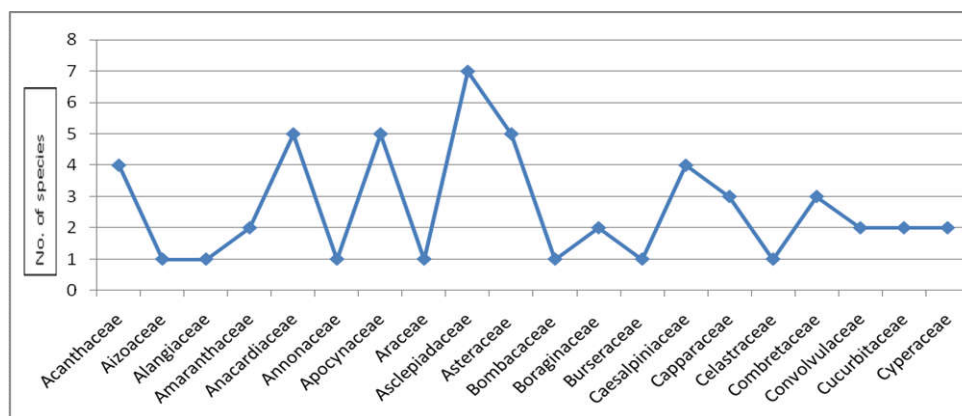
## DISCUSSION

As we all know by now, biodiversity is essential for maintaining the ecological functions, including stabilizing of the water cycle, maintenance and replenishment of soil fertility, pollination and cross-fertilization of crops and other vegetation, protection against soil erosion and stability of food producing and other ecosystems. Conservation of biological diversity leads to conservation of essential ecological diversity to preserve the continuity of food chains. Biodiversity provides the base for the livelihoods, cultures and economies of several hundred millions of people, including farmers, fisher folk, forest dwellers and artisans. It provides raw material for a diverse medicinal and health care systems. It also provides the genetic base for the continuous up-gradation of agriculture, fisheries, and for critical discoveries in scientific, industrial and other sectors. The rapid erosion of biodiversity in the last few

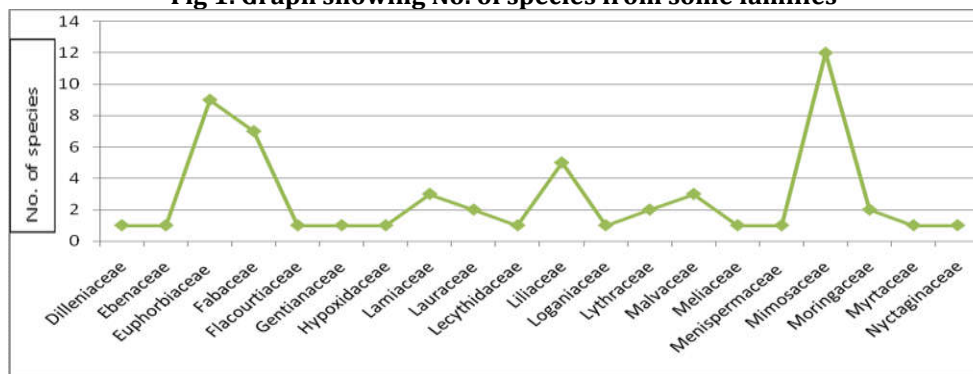
decades has impacted on the health of the land, water bodies and people. Biodiversity is a wealth to which no value can be put. In the final analysis, the very survival of the human race is dependent on conservation of biodiversity. It is evident that this invaluable heritage is being destroyed at an alarming rate due to several reasons. Measures are being taken up at national and international levels to address this issue. The Earth Summit produced a plan of action on a number of issues including conservation of biodiversity during the 21<sup>st</sup> century. Conservation and sustainable use of biological resources based on local knowledge systems and practices is ingrained in Indian ethos.

The major families which occupied first and second position were Mimosaceae-12sp Euphorbiaceae-9sp, and all 149 plant species belonging to 57 families were documented and authentically identified. The tribal for their health care, of these 4species are recorded from Acanthaceae, Aizoaceae-1sp, Alangiaceae-1sp, Amaranthaceae-2sp, Anacardiaceae-5sp, Annonaceae-1sp, Apocynaceae-5sp, Araceae-1sp, Asclepiadaceae-7sp, Asteraceae – 5sp, Bombacaceae -1sp, Boraginaceae -2sp, Burseraceae -1sp, Caesalpiniaceae-4sp, Capparaceae-3sp, Celastraceae-1sp, Combretaceae-3sp, Convolvulaceae-2sp, Cucurbitaceae-2sp, Cyperaceae-2sp, Dilleniaceae-1sp, Ebenaceae-1sp, Euphorbiaceae-9sp, Fabaceae-7sp, Flacourtiaceae-1sp, Gentianaceae-1sp, Hypoxidaceae-1sp, Lamiaceae-3sp, Lauraceae-2sp, Lecythidaceae-1sp, Liliaceae-5sp, Loganiaceae-1sp, Lythraceae-2sp, Malvaceae-3sp, Meliaceae-1sp, Menispermaceae-1sp, Mimosaceae-12sp, Moringaceae-2sp, Myrtaceae-1sp, Nyctaginaceae-1sp, Orchidaceae-1sp, Periplocaceae-1sp, Plumbaginaceae-1sp, Poaceae-1sp, Rhamnaceae-2sp, Rubiaceae-6sp, Rutaceae-4sp, Sapindaceae-3sp, Solanaceae-6sp, Sterculiaceae-1sp, Tiliaceae-1sp, Ulmaceae-1sp, Verbenaceae-6sp, Violaceae-1sp, Vitaceae-2sp, Zingiberaceae-2sp, Zygophyllaceae-1sp. According to a report of the World Health Organization (WHO), three fourth of the World population cannot afford the products of the modern medicine and have to rely on the use of traditional medicine of plant origin (Rai *et al*, 2000).

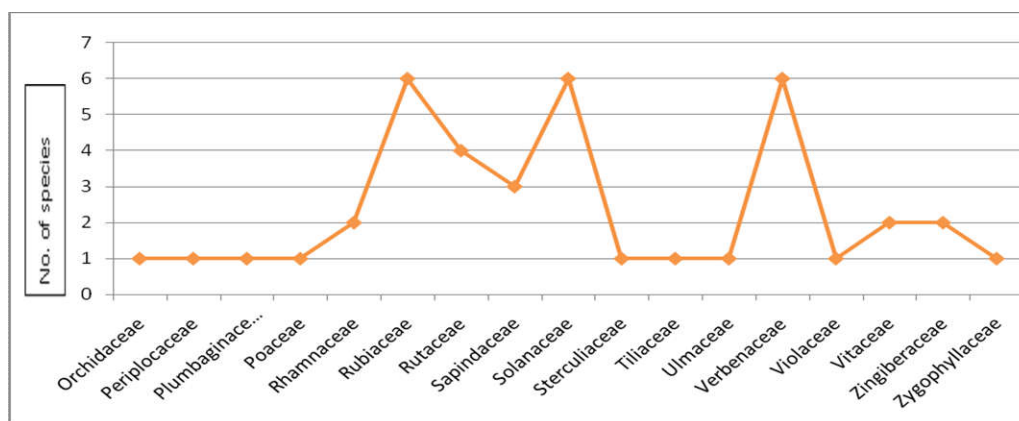
The herbal remedies mentioned are of certain general and specific ailments, such as snake bite, cough, and scorpion sting, head ache, back pain body pains, cold, dandruff, dog bite, fever, hair loss, jaundice, inflammation, joint pains, lice killer, skin ailments, ear pains, eye problems, red and white discharge in women, loss of semen in urine in men, tooth ache and gum problems, stomach ache, bone fractures, conception and menstrual problems and wound healing. The resource persons are mostly lambadas, chenchus and some elderly people of local villages. The people practice and cure almost all ailments or diseases or wounds very effectively with simple locally available plants with out involving much financial commitment, in majority of the cases they treat freely. It revealed valuable information about the ethno medicine of the local tribals of Vikarabad in Rangareddy District.



**Fig 1. Graph showing No. of species from some families**



**Fig 2. Graph showing No. of species from some families**



**Fig 3. Graph showing No. of species from some families**

## CONCLUSION

The country has a number of alternative medicines, like Ayurveda, Unani, Siddha and Homeopathic systems which are predominantly based on plant based raw materials in most of their preparations and formulations. Herbal preparations for various purposes including pharmaceutical and cosmetic form part of traditional biodiversity uses in India. India is one of the twelve mega biodiversity countries in the world representing 6.5 percent of world's know wildlife and 12 percent of plant life. Of this ten percent of flora is on the verge of extinction, and many more are on the threatened list while some of them are already rare of disappeared due to in hospitable atmosphere created by man to the plants.

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# ETHNOMEDICINAL KNOWLEDGE OF TRADITIONAL PEOPLE IN ANANTHAGIRI RESERVE FOREST AREA RANGAREDDY DISTRICT TELANGANA STATE INDIA.

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## ABSTRACT

The present study deals with the documentation and evaluation of medicinal plants used by the tribal people in the primary health care in and around Anantagiri and Dhamagundam forest area, Rangareddy district. About 40 villages have been chosen for the study and yielded a valuable knowledge of plant medicine of the locals. The resource persons are mostly lambadas, chenchus and some elderly people of local villages. The study started in the month of May, 2012 and went on up to May, 2014. It revealed valuable information about the ethno medicine of the local tribals of this Dist. . About 138 plant species of 36 families have been documented in this study and an itinerary is prepared according to alphabetical order of the diseases, families along with the vernacular names, botanical; names, drug formulation of drug formulation and methods of drug administration as told by the herbal practitioners

**Keywords:** Medicinal Plants, Traditional Botanical knowledge, Tribals, Rangareddy District.

## INTRODUCTION:

Documentation of Ethno botanical studies of any area has attained importance due to fast depletion of folklore knowledge and their uses because of modern life styles. The present use of modern medicine is increasing the vulnerability of human beings to various illnesses of unknown nature. The dominant allopathic systems of Medicine though providing treatment to many diseases also cause deleterious side effects on human body. All these factors are forcing the man to look for alternative sources more particularly from the plant origin. The usefulness and efficacy of the plants as curative agents of many human diseases is long known. Traditionally, the knowledge of plants as source of medicines for different diseases is well known through traditional medicinal systems of Ayurveda, Siddha, Unani, Homeopathy, Chinese's and Tibetan medicine. The vast tracts of Indian sub-continent and its rich flora and fauna are still to be explored. The people living in the forests and its vicinity and tribals are using many plants for several health problems. These people living away from the modern society, due to lack of proper health care, still depend on the folk lore medical practices for the primary health care. The ethno botanical survey of the area under study includes Vikarabad, Dharur and their surroundings of Rangareddy Dist. It is located on the central part of the Deccan plateau and lies in between 17<sup>0</sup> 20' and 18<sup>0</sup> 20' of North latitudes and 77<sup>0</sup> 54' and 79<sup>0</sup> 34' of East longitudes at Mean sea level 625.67mts. The forest cover is classified as a Southern Tropical Dry Deciduous type. Categorized, under group 5A/C-3 type of forest. The forest is of inferior type because of less rainfall, poor soil conditions and ever increasing biotic influence. The climate of the area is characterized by a hot summer of long duration and generally a dry weather, except during South-West monsoon season.

## STUDY AREA

The district which is located in the western part of Telangana is known as Rangareddy district. Its head quarters are located at Hyderabad. The Ranga Reddy district lies between east longitudes 77°21' - 78°51' and north latitudes 16°54' - 17°48'. Ranga Reddy district is divided into 3 revenue divisions, 37 mandals, and 870 revenue villages. The district is bordered by north Medak district, to the east Nalgonda district, south side by Karnataka state respectively. The population is calculated in 2011 is 52, 96,396 lakhs and it has the geographical area of about 7,493 Sq. Km. Ranga Reddy District is at the cross roads of India geographically, historically and has been the meeting ground for the fusion of various civilisations, religions, races, cultures, languages and traditions with the twin cities of Hyderabad and Secunderabad as its core. This District including present Hyderabad Urban District was formerly known as Atrafe-Balda District and was a part of the gulshanabad, Medak Division (Subah). In 1931-34 Baghat taluk from Atraf-e-Balda District, was made a separate Baghat District under the Commissioner (Subedar) of Medak Division. After police Action in 1948, Atraf-a-Balda and Baghat District were merged to form the Hyderabad District. Later in 1978, it was split into Hyderabad Urban District and Hyderabad Rural District or Ranga Reddy District During 1901 the population density which was 54 person per Sq.Km had raised to 707 persons per Sq. Km. Out of 7,49,300 hectors of total geographical area 73,075 hectors of land is covered by forests. The land which was kept to non-agricultural use is 1, 49,181 hectors and barren and uncultivable land is 27,084 hectors. The total net area is 2, 34,557 hectors. The administrative map of Ranga Reddy district shows this. The major crops of Ranga Reddy district is Paddy, Groundnut, Jowar and Maize respectively.

## METHODOLOGY:

The present study deals with Traditional medicinal plants existing in the district of Rangareddy disirict related with the traditional medicinal practices of local folklore community, Golla, Kurma, Lambada, Chenchu and other village heads and local practitioners. The work is aimed at documentation, availability, utility and methodology of drug preparation by these communities in the fields of primary healthcare of human being as well as veterinary health practices. As on today there is no proper scientific documentation of healing practices of these communities. To record the traditional medicinal practices of the folklore community of Rangareddy district and the potentiality of Traditional botanical knowledge: of the local people. Differing Folklore Medicinal practices by different communities in Rangareddy district; Lambadi, Kuruma, Golla etc. Botanical identification and herbarium preservation of the plants used by them, which are in use for curing the diseases by them, for different ailments. To record the methodology followed by them in diagnosis and administration of the drug for curing of the diseases. Publication of the scientific data in reputed journals for future scientific studies. Morphological study, which is the sheet anchor for the scientific documentation of traditional knowledge? To study the other non-medicinal uses of the plants such as food, fodder

The present study includes the survey of nearly 40 villages in Vikarabad, Dharur mandals and their surroundings of Rangareddy Dist, during the last two year May, 2012 and went on up to May, 2014. Several villages of the target area have been visited to find out resource persons, herbal practitioners and village heads. Resource persons with great known how pertaining to folklore practices were identified after conducting 2-3 trips to the villages. However a few villages were identified with the people having potential knowledge in use of medicinal plants for different ailments..The Ethno botanical data were collected and recorded following the standard procedures (Jain S.K, 1995.) by interacting with as many as 40 herbal practitioners and elders of the villages. Plant specimens were collected during the survey in different seasons and prepared herbarium specimens and identified with the help of floras. It is deposited



with the Botany department SAP College, Vikarabad. The plant specimens collected were identified and cross checked with the Herbarium of Department of Botany, PG College of science, Saifabad, Osmania University. In this study the local (vernacular) name of plants being used, preparation of the drugs, methods of administration and precautions regarding food and avoidances and other practices were systematically recorded and documented. For identification and cross checking frequent visits were made to the Botany department Herbarium, PG. College of Science Saifabad, Osmania University, Hyderabad.

### ENUMARATION

	Botanical Name	Family Name	Local Name	Aliment	Formulation
1.	<i>Acacia farnesiana</i> (L.) Willd. (Mimosaceae)	Mimosaceae	:Kasturi tumma, Muriki tumma	Mad dog bite Verri kukka katu	10 ml stem bark juice is given internally twice daily for three days)
2.	<i>Acacia nilotica</i> (L.) Del	Mimosaceae	Nalla tumma	Toothache:	Clean teeth with stem bark ash daily till cured. Apply stem bark ash by mixing coconut oil till cured.
				Burns and Wound	Apply stem bark ash by mixing coconut oil till cured
3.	<i>Acanthospermum hispidum</i> DC	Asteraceae	Kanigera alam, Guntakalagaraku	Cuts and wounds	Leaves paste is applied on the affected part of the body once a day for 3-4 days.
				Wounds	Make fine paste with leaves by adding tea spoonful of curcuma powder. Apply this paste externally on affected part once daily till cured.
4.	<i>Achyranthes aspera</i> L.	Amaranthaceae	: Uthareni, Chitikaalu,	Burns	Apply leaf extract as a lotion for 2-3 days
				Toothach	2 ml Leaves juice and dilute 1 g rock salt into it. Pour 2- 3 drops in to the ear. If the tooth pain is on right side pour drops in the left ear and vice versa
5.	<i>Aegle marmelos</i> (L.) Corr	Rutaceae	Bilvamu, Maredu,	Arthritis	Make paste with leaves and mix equal quantity of sesame oil. Apply this paste externally on the affected part once a day till cured
				Dysentery:	10 g of semi burnt fruit pulp is given twice a day for 2- 3 days.
6.	<i>Aerva lanata</i> (L) R.Br	Amaranthaceae	I. Pindikura	Abdominal pain	10 ml root decoction is given internally once in the early morning for 3 days
7.	<i>Agave Americana</i> Linn.	Agavaceae	Sakari matta	Ulcer	50 g leaf pulp is given with 1 g sugar for 30 days to cure ulcer completely.
8.	<i>Ageratum conyzoides</i> L	Asteraceae		Burns	Apply fresh leaf juice on the affected part

			Ganagaju, Sahadevi	Urinary infection	10 ml of leaf extract is given orally twice daily for three days
9.	<i>Ailanthus excelsa Roxb</i>	Simaroubaceae	Pedda manu Peethiri manu	Leucorrhoea	Make stem bark juice by adding 5g of Piper longum and 5g of Cuminum cyminum. 10ml juice is given thrice a day for one day.
10.	Alangium salvifolium (L.f.) Wang	Alangiaceae	Uduga,	Arthriti	Grind together handful stem bark with five fruits of black pepper and wrap it in cotton cloth to dip in 250 ml of hot water for fifteen minutes. 100 ml of this solution is given internally for one time, repeat it after a week if necessary
				Stomach pains	Make leaf juice and add double quantity of cow ghee to the juice. Given this medicine orally once daily for three days
11.	<i>Albizia amara</i> (Roxb.)	Fabaceae	Narlingi	Fever	5 g each of stem barks of Albizia amara, Azadirachta indica, Zizyphus oenoplia, Capparis zeylanica, Ricinus communis, and Cassia fistula are pounded together to make powder and mix one tea spoonful of powder made into decoction in 100 ml of water and filtered. The decoction thus prepared is given internally twice a day for two days.
12.	<i>Albizia lebeck</i> (Linn.)	Mimosaceae	Dirisena, Pedda dirisenam	Scabies	Grind 50g stem bark with 2 fruits of <i>Piper nigrum</i> and mix it into one glass (200ml) of water. 100 ml of this medicine is given internally thrice a day for one day.
13.	<i>Allium cepa</i> L	Liliaceae	Ulligadda,Erragadda	Immunity	Cut fresh onions and eat them as salad during lunch and dinner.
14.	<i>Allium sativum</i> L.	Liliaceae	Thella gadda	Swellings	Bulb paste is applied on the affected part once day till cured.
15.	<i>Aloe vera</i> (L.) Burm.f.	Liliaceae	Kalabanda	Red discharge in woman	Given 100 g leaf pulp with sugar once a day till cured
				Burning sensation	Given 50 g leaf pulp with 10 g glucose for 3 days.

				while urination	
16.	<i>Alternanthera sessilis</i> (L.)DC	Amaranthaceae	Ponnagantikura	Night blindness	Make curry with leaves and given once a week
17.	<i>Alysicarpus monolifer</i> (L.) DC	Fabaceae	Amera	Wounds	Apply leaf juice on wounds twice daily for three days
18.	<i>Amaranthus spinosus</i> L	Amaranthaceae	Nalladoggata	Cuts and burns	Apply fresh leaf juice on affected part.
19.	<i>Amaranthus tricolor</i> L	Amaranthaceae	<i>Mulla thotakura</i>	Scabies	Root paste is applied (mix 0.5 g of sulphur for 100 g paste) externally once daily till cured.
20.	<i>Andrographis paniculata</i> (Burm.f.)Wall. ex Nees	Acanthaceae		Controlling high BP	Ground whole plant with 10 fruits each of <i>Piper longum</i> , and <i>Piper nigrum</i> and make 5 g of sized pills. One pill is given orally until comes to the normal.
				Stomach pain	One tea spoonful of powder is given internally through cow milk for one time.
				Fever	This plant is decocted with 3 fruits of black pepper. 10ml decoction is given internally thrice daily until cured.
21.	<i>Annona squamosa</i> L	Annonaceae	Seethaphal	Arthriti	Leaves paste is applied externally on affected part once daily till cured.
22.	<i>Anthocephalus cadamba</i> (Roxb) Miq		Rudraganam,	Dysentery	10 ml of stem bark juice is given with one glass of water once daily for three days.
23.	<i>Argemone mexicana</i> L	<i>Papaveraceae</i>	Yerrickusuma	Swellings	Milk sap is applied externally on the affected part twice daily for 2-3days
				Skin allergy	Milk sap is applied externally on affected part once daily for 3-4 days.
24.	<i>Argyreia nervosa</i> (Burm.f.)		Samudrapala	Skin allergy	Apply leaves paste on affected part once daily till cured.
25.	<i>Aristolochia bracteolata</i> Lam	Aristolochiaceae	Aristolochiaceae	Stomach pain	Grind 3 fresh leaves with 3 fruits of <i>Piper nigrum</i> and mix this into 20 ml water. 20 ml juice is given orally for one time only.
26.	<i>Aristolochia indica</i> L	<i>Aristolochiaceae</i>	Nalla eswari	Skin infection	10 ml of root decoction is given internally once daily in the morning for a week.
27.	<i>Asparagus racemosus</i> Willd	Liliaceae	Callagadda	Mouth ulcers	Make root powder along with seeds of <i>Abutilon indicum</i> . One tea spoon is given in morning with sugar.
				Enhance breast milk	The root powder is given to the mothers internally along with

					water or milk once a day for two weeks.
28.	<i>Azadirachta indica</i> A. Juss	Meliaceae	Vepa	Fever:	50 g stem barks of each of <i>Azadirachta indica</i> , <i>Zizyphus oenoplia</i> , <i>Capparis zeylanica</i> , <i>Ricinus communis</i> , <i>Cassia fistula</i> and <i>Albizia amara</i> boil in 1 liter of water for 15 minutes. 5 ml of decoction is given internally twice daily for 3- 4 days.
29.	<i>Balanites aegyptiaca</i> (L.) Del	Balanitaceae	Gara chettu	Fever	Crushed fruit is given internally through water once daily for three days
				Immunity	Leaf chutney is prepared and eaten once in week by locals during first rains (as on set of monsoon) to enhance immunity in their body to fight with the water borne disease.
				Joint pains	The pulp of dried fruit is used to cure joint pains in old people
30.	<i>Barleria prionitis</i> L.	Acanthaceae	Mulla gorinta	Toothache	Chew the fresh stem piece for 5 min daily for 2 days
				Arthritis	Roust fresh leaves and put them on affected part when they are slightly warm once daily till cured.
31.	<i>Basella alba</i> L	<i>Basellaceae</i>	Bachali kura	Anemia	<i>Make chutney with leaves of Basella alba, Moringa oleifera. Eat this chutney twice a week for 3 weeks to enhance their hemoglobin percentage</i>
32.	<i>Bauhinia racemosa</i> Lamk	Caesalpiniaceae	Aare chettu	Arthritis	Make decoction with stem barks of <i>Bauhinia racemosa</i> , <i>Semecarpus anacardium</i> and 30 ml is given internally once a day for two days
33.	<i>Biophytum sensitivum</i> (L.)DC	<i>Oxalidaceae</i>	<i>Muduchu thamara</i>	Cut and wounds	Leaf paste is applied externally once daily till cured.
				<i>Gonorrhea</i>	10 ml of root decoction is given internally once daily in the morning for 4 weeks.
34.	<i>Boerhaavia diffusa</i> L	<i>Nyctaginaceae</i>	Atikamamidi	Anemia	10ml leaf juice is given through honey daily once for 15 days.
				Diarrhoea	Make decoction with leaves and take 10ml orally twice daily till cured
35.	<i>Boswellia serrata</i> Roxb.	Burseraceae	Andugu	Arthritis	One tea spoon full of gum powder is given through a

					glass of goat milk daily once till cured.
36.	<i>Brassica juncea</i> (L.) Czern	Brassicaceae	Avalu	Fever	Apply seed oil on whole body mainly on chest part to control high fever particularly to the children.
				Skin infection	Semi roasts the seeds and makes a powder. Apply this powder along with coconut oil externally once a day for 4-5 days.
37.	<i>Bridelia montana</i> Willd	Euphorbiaceae	Panchothkam	Dysentery	One tea spoonful of stem bark powder is given internally along with one glass of warm water twice daily for 3 days
38.	<i>Bridelia retusa</i> (L.) Spreng	Euphorbiaceae	Mulumaddi	Arthritis	50 g crushed stem bark is decocted in 100 ml sesame oil for 15 minutes and it is applied externally on affected part of the body once daily till cured.
39.	<i>Bryonopsis laciniosa</i> (L.)	Cucurbitaceae	Ningi donda	Stomach pain	Ground 10 g seeds along with 5 g of black pepper to make powder. 10 g of powder is given internally as single dose.
				Arthritis	Leaves are decocted with sesame oil and applied topically twice daily for 15 days.
40.	<i>Buchanania lanzan</i> Spreng	Anacardiaceae	Morlichettu	Infertility	15 g seed powder is given with goat or cow milk internally during bed time after fifth day of menstruation
41.	<i>Butea monosperma</i> (Lamk.)	Fabaceae	Moduga	Fever	Make powder by the dry flowers of <i>Butea monosperma</i> , <i>Trachyspermum ammi</i> , <i>Cuminum cyminum</i> , <i>Piper nigrum</i> , <i>Zingiber officinalis</i> . Table spoon powder is given orally daily in the morning and evening till cured.
				Intestinal worms	50 ml flower decoction is given orally for one time.
				Infertility	50 ml of stem bark extract is given internally for three days to check conception.
42.	<i>Caesalpinia bonduc</i> (L.) Roxb	Caesalpiniaaceae	Gacha	Intestinal worm	5 g of seed pulp powder is mixed into one glass of water and given, twice daily till cured.
43.	<i>Calotropis gigantea</i> (L.) R.Br	Asclepiadaceae	Jilledu	Arthritis	Milk sap is applied externally on the affected part twice daily for three days

				Scorpion sting	Milk sap is mixed into equal quantity of mango resin and applied externally at the place of sting for two times a day.
				Burning sole	Heat leaves on fire and put them on the ground and ask patient to step on these leaves for 15 minutes. Apply Sesame oil to sole before stand on leaves.
44.	<i>Canavalia virosa</i> (Roxb.) Wt.&Arn	Fabaceae	Thamma kaya.	Ring worm	Leaves extract is applied on the affected part once daily for three days.
45.	<i>Canthium parvilorum</i> Lam	Rubiaceae	China balusu	Intestinal worms in children	3 ml of root extract is given internally once in the morning as a sing dose.
46.	<i>Capparis zeylanica</i> L	Capparidaceae	Adonda	Stomach pain	10 ml of stem bark extract is given orally twice daily till cured.
				Fever	Collect 5 g stem barks each of <i>Capparis zeylanica</i> , <i>Azadirachta indica</i> , <i>Zizyphus oenoplia</i> , <i>Ricinus communis</i> , <i>Cassia fistula</i> , <i>Albizia amara</i> to make decoction in one liter of water. 20 ml of this decoction is given internally twice a day for two days.
				Diabetics	<i>Ripe fruits are eaten twice in a day to control sugar level</i>
47.	<i>Capsicum annum</i> L.	Solanaceae	Mirpakaya	BP control	It regulate blood pressure to normal in low blood pressure patients (many rural folks)
48.	<i>Cardiospermum halicacabum</i> L	Sapindaceae	Buddakaakara teega	Wounds	Grind 50 g leaves along with 5 g <i>Cuminum cyminum</i> to make paste and it is applied externally on affected part once a day for three days.
				Arthritis	50 g leaves are decocted in 100 ml sesame oil and applied on affected part once daily till cured.
49.	<i>Careya arborea</i> Roxb	Barringtoniaceae	Dudippa	Stomach pain	10 ml of stem bark extract is given internally twice daily for 2 days to cure stomach pain due to intestinal worms or indigestion.
				Stomach pain	10ml of leaf and stem bark decoction is given internally twice daily for 2 days.

50.	<i>Carica papaya</i> L	Caricaceae	Bappayi	Scabies	Apply latex on the affected part once daily till cured. (Many women in the district)
51.	<i>Carum copticum</i> Benth.&Hook.	Apiaceae	Oma	Stomach pain	Chew 5g of <i>Carum copticum</i> for two times.
				Fever	Ground 5 g each of <i>Carum copticum</i> , <i>Cuminum cyminum</i> , <i>Piper nigrum</i> and <i>Zingiber officinalis</i> to make juice and 2 tea spoons are given daily in the morning and evening for two days.
52.	<i>Cassia auriculata</i> L	Caesalpiniaceae	Tangedu	Diabetic	20 g of matured stem powder is given along with one glass of water once a day for a month.
				Leucorrhoea	Decoction of flowers (20 ml) is given internally to control white discharge during menstrual time in women. (Many rural women)
53.	<i>Cassia fistula</i> L	Caesalpiniaceae	Rela	Arthritis	Apply paste with made up of leaves externally during bedtime for 3-4 days.
				Stomach pain	Fruits pulp is eaten once to reduce pain
				Fever	Collect 5g each stem barks of <i>Cassia fistula</i> , <i>Capparis zeylanica</i> , <i>Albizia amara</i> , <i>Azadirachta indica</i> , <i>Zizyphus oenoplia</i> and <i>Ricinus communis</i> . Dry them and make powder mix one tea spoonful of powder into 1 glass of water and boil it for 10minutes. Administer this decoction orally twice a daily for two days
				Throat infection	Decoction of fruit pulp is used to gargle to control throat infection.
54.	<i>Cassia occidentalis</i> L.	Caesalpiniaceae	Kasinha	Stomach pain	50 ml root extract is mixed into 1 g powder of <i>Carum copticum</i> and it is given orally once daily till cured.
55.	<i>Cassia tora</i> L	Caesalpiniaceae	Thydanta	Wounds	Leaf paste is applied locally once daily for 3-4 days.
56.	<i>Ceiba pentandra</i> (Linn) Gaertn	Malvaceae	Tella buruga	Impotency	10 ml of stem bark juice is given with goat milk every day during bed time for a period of month.

57.	<i>Celastrus paniculatus</i> Willd	Celastraceae	Jyothismathi	Arthritis	10 g seeds are crushed and boil it in 100 ml of sesame oil for 15 minutes and it is applied externally on the affected part once daily during bed time till cured.
58.	<i>Celosia argentea</i> L	Amaranthaceae	Bathukamma puvvu	Scabies:	Leaf paste is applied locally twice daily till cured.
				Night blindness	Make chutney with fresh leaves and eaten twice in a week for two months
59.	<i>Centella asiatica</i> (Linn.)	Apiaceae	Saraswati aku	Sun allergy	Applied leaf juice externally on the affected part once daily for two days.
				Jaundice	20 ml of leaf juice is given internally early in the morning once a day for 4-5 days
60.	<i>Cicer arietinum</i> L.	Fabaceae	Chanagalu	Immunity	Sprouts are fried them with ghee and given to the patients along with roti thrice a week for a month.
61.	<i>Cissus vitiginea</i> L	Vitaceae	Dididi aku	Wounds	Apply stem bark paste externally on affected part once daily till cured.
62.	<i>Cissus quadrangularis</i> Linn	Vitaceae	Nalleru	Cold and Cough	10 ml tender shoots extract is given orally as a single dose.
				Bone fracture	Ground the fresh stem and mix with ghee and it is given orally a week to quick recover from fractured patient.
63.	<i>Citrullus colocynthis</i> (L.) Schrad	Cucurbitaceae	Eetiputcha	Jaundice	5 g of root powder is mixed into 100 ml cow milk and it is given internally once a week for 3 weeks. Avoid eating chicken, mutton and fish etc.
64.	<i>Citrus aurantifolia</i> (Christm. & Panz.) Swingle	Rutaceae	Nimma	Dandruf	5 ml fruit juice is mixed into 20 g curd and it is applied externally twice a week for a month.
				Vomiting	Inhales the smell of ripen fruit.
65.	<i>Cleistanthus collinus</i> (Roxb.) Bth. ex Hook. f.	Euphorbiaceae	Billa godisa	Fungus in fingers	Leaves paste is applied externally by adding little turmeric powder once daily for three days.
66.	<i>Cleome gynandra</i> Linn	Capparidaceae	Vamiti	Ear ache	Pour 2 -3 drop of leaf extract into the affected ear once daily for 2 days.
67.	<i>Cleome viscosa</i> Linn	Capparidaceae	Vaviti	Headache	Crushed leaves (which have removed juice) should be placed on head and tie with cloth for an hour, repeat it after 4 hours if necessary



68.	<i>Clerodendrum multiflorum</i> (Burm. f.) O. Ktze.	Verbenaceae	Thakkali chettu	Stomach pain	Grind handful leaves along with 5g of <i>Trachyspermum ammi</i> to make pills, 10g size pill is given internally twice a day for one day.
				Arthriti	Leaf paste is applied externally on the affected part once a day for two days
69.	<i>Clerodendrum serratum</i> (Linn.) Moon	Verbenaceae	Gantubharangi	Fever	Make decoction with 50 g roots along with 20 g of <i>Andrographis paniculata</i> , and 3 black pepper. 20ml decoction is given internally twice daily for 3 days.
70.	<i>Clitoria ternatea</i> Linn	Fabaceae	Shankhapus hpi	Psoriasis	Make root paste and applied along with leaf pulp of <i>Aloe vera</i> externally once daily for 3-4 weeks.
71.	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	Adavi donda	Diabetics	10 ml fruit juice is given internally once a week
72.	<i>Cocculus hirsutus</i> (L.) Diels	Menispermaceae	Dusara teega	Venereal disease	20 ml leaf juice is given orally once a day for a month
				Leucorrhoea	Leaf juice is given by adding sugar internally once daily for 15 days
				Red discharge	Grind handful leaves along with 10g of crystalline suger (misri) and it is given internally once a day for 15 days.
73.	<i>Cochlospermum religiosum</i> (Linn.)	Cochlosperma ceae	Konda gogu	Cough	Make powder with stem barks of <i>Cochlospermum religiosum</i> and <i>Terminalia chebula</i> . Mix 2g powder into 100ml hot water. 100ml medicine is given internally once in the early morning for a week
74.	<i>Cocos nucifera</i> L.	Arecaceae	Tenkai	Dehydration	500 ml of coconut water given twice daily for 2-3 days along with salt water.
75.	<i>Cordia dichotoma</i> Forst	Boraginaceae	Chinnakker	Diarrhoea	Semi burnt fruits are given internally for three times a day.
76.	<i>Coriandrum sativum</i> L	Apiaceae	Kothmeera	Stomach pain	Make chuntney with leaves and eaten twice a day for easy digestion.
77.	<i>Croton bonplandianum</i> Baill.	Euphorbiaceae	Galivana alam	Stomach pain	Apply milk sap on the affected part once daily for 3-4 days.
78.	<i>Cryptolepis buchananii</i> Roem.&Schult	Asclepiadaceae	Adavi pala teega	Arthritis	Make chutney with leaves of <i>Cryptolepis buchanani</i> and <i>Cissus quadrangularis</i> and

					given to eat like chutney twice a week for 3-4 weeks.
79.	<i>Cuminum cyminum</i> L	Apiaceae	Jeelakarra	Fever	Grind 5g each of <i>Cuminum cyminum</i> , <i>Carum copticum</i> , <i>Piper nigrum</i> and <i>Zingiber officinalis</i> altogether to make juice. Two tea spoons are given daily in the morning and evening for two days.
80.	<i>Curculigo orchioides</i> Gaertn	Hypoxidaceae	Nela thadi	Impotency	5 g roots powder is given internally along with 100ml goat milk once daily during bed time for 15 days.
81.	<i>Curcuma longa</i> L	Zingiberaceae	Pasupu	Cold	Rhizome paste is applied on the top of the head of childred through mixing castor oil twice a day for 3 days.
				Cuts and wounds	Rhizome paste is applied immediately on the place of cut to control bleeding.
82.	<i>Cymbopogon martini</i> (Roxb.) Wets	Poaceae	Nimma gaddi	Lice on head	Grind the leaves of <i>Cymbopogon martini</i> and <i>Annona squamosa</i> together to make paste and it is applied to the hair once daily for 2-3 days
83.	<i>Dalbergia paniculata</i> Roxb	Fabaceae	Pacharugu	Hair fall and dundraf	Stem bark paste is applied to the hair once in a week to control hair fall due to dundruf.
84.	<i>Datura metel</i> L	Solanaceae	Nalla ummetha	Arthritis	Leaves paste is applied on the affected part once a day for 2 days
85.	<i>Desmodium gangeticum</i> (L.) DC	Fabaceae	<i>Deyyam jada</i>	Feve	Decocted 50g fresh roots along with 3 pepper in 200ml of water and 10ml of this decoction is given internally twice daily for 3- 4 days.
86.	<i>Dioscorea bulbifera</i> L	Dioscoreaceae	Nela dumpa	Tumors	Tuber paste is applied externally once daily for 3-4 days.
87.	<i>Dioscorea pentaphylla</i> L	Dioscoreaceae	Genusugaddalu	Indigestion	20ml tuber juice is given internally twice daily for 2 days.
88.	<i>Dodonaea angustifolia</i> L.f., Suppal	Sapindaceae		Sprains	Rousted fresh tender leaves are placed on the affected part of the body once daily for 3-4 days.
89.	<i>Dolichos lablab</i> L	Fabaceae	Chikkudu	Ringworm	Fresh leaf juice is applied externally on the affected part once daily for 3-4 days.
90.	<i>Eclipta prostrata</i> (L.)	Asteraceae	Gunta kalagaraaku	Stress relief	Leaf paste is applied to the hair for one time only.

				Anaemi	Make chutney with leaves and eaten along with rice once a week for 3-4 weeks
				Hair fall and white hair	leaf paste is applied once a week to control white hair and hair fall.
91.	<i>Eleusine coracana</i> (L.)	Poaceae	Thydalu	Tooth pain in children	100ml of grain flour is given internally daily for a month.
92.	<i>Emblica officinalis</i> Gaertn	Euphorbiaceae	Usiri	Indigestion	5g fruit powder is given internally after food for 2-3 times a day.
				Burning sensation while urination	10g fruit powder is given with sugar internally morning and night until cured.
93.	<i>Enicostemma axillare</i> (Lam.)	Gentianaceae	Resika	Stomach pain	5ml plant extract is given along with 2 g of black pepper powder internally as a single dose.
94.	<i>Euphorbia hirta</i> L	Euphorbiaceae	Pacha botla	Conjunctivitis	One or two drop of milk sap is applied on the affected eye once a day for three days.
				Menstrual pains	20ml leaf juice is given internally once daily during menstrual period
				Scabies	Leaf juice is applied by mixing 1g of sulphur externally on the affected part of the body once daily 3-4 days.
95.	<i>Euphorbia tirucalli</i> L	Euphorbiaceae	Manchi jemudu	Piles	Milk sap is mixed with turmeric powder and applied on the affected part once a day for a week to complete cure of pile in children.
96.	<i>Feronia elephantum Correa</i>	Rutaceae	Velaga	Diarrhoea	Young fruit pulp is given internally for one time only.
97.	<i>Ficus bengalensis</i> L	Moraceae	Marri	Impotency	Handful of young leaf buds are shade dried and make powder and it is mixed into cow ghee.,
98.	<i>Ficus hispida</i> L. f.	Moraceae	Brahma medi,	Mad dog bite	20ml fruit juice is given internally once daily for two days.
99.	<i>Ficus religiosa</i> L	Moraceae	Ravi chettu	Impotency	5g fruits powder is given along with cow milk daily once for a month.
				Skin diseases	Stem bark paste is applied on the affected part once daily till cured.
100	<i>Gardenia gummifera</i> L	Rubiaceae	Chit-mit	Stomach pain	5ml of stembark juice is given orally once to cure stomachpain.

101	<i>Gloriosa superba</i> L	Liliaceae	Nabhi pulu	Swelling	Corm paste is applied externally on the affected part once a day for three days.
102	<i>Gmelina arborea</i> Roxb	Verbenaceae	Pedda ummudu.	Back pain	10 ml root extract is given internally once a day for a week.
103	<i>Gymnema sylvestre</i> (Retz.)	Asclepiadaceae	Podapathri	Diabetic	10ml leaf decoction is given internally early in the morning for 30 days.
104	<i>Haldinia cordifolia</i> (Roxb.)	Rubiaceae	Bandaru	Dysentery	20ml stem bark juice is given internally twice daily till cured
105	<i>Helicteres isora</i> L	Sterculiaceae	Nuli thada	Scabie	Sun dry the fruits to make powder. Apply powder by mixing coconut oil externally on the affected part once daily till cured
106	<i>Heliotropium indicum</i> Linn	Boraginaceae	Naga danthi	Scorpion sting	Leaf juice is applied externally on the affected part once daily for 3 days.
107	<i>Hemidesmus indicus</i> (L.) Schult	Periplocaceae	Sugandi pala	Weakness	One tea spoonful of power is mixed in a acup of tea and it is given to drink daily for a month.
108	<i>Hibiscus rosa-sinensis</i> L	Malvaceae	Mandara	Control Hair fall	Fry handful petals and soak them in 100ml coconut oil and it is applied to the hair every day.
				Dandruff	Flowers are boiled in coconut oil for 15 minutes and cooled, apply this oil to the hair once daily to control dandruff.
109	<i>Holarrhena pubescens</i> (Buch.-Ham.) Wall. Ex G. Don	Apocyanaceae	Nallapalagodisa	Cuts and wounds	Milk sap is applied externally on the portion of the cut or wound to control bleeding and apply fresh turmeric paste incase of small cuts.
110	<i>Holoptelea integrifolia</i> (Roxb.) Planch	Ulmaceae	Nemalichettu	Arthritis	Make stem bark paste and boil with sesame oil for 30 min and apply externally when it is lukewarm once daily till cured.
111				Sprains:	Applied latex externally on affected part, once daily till cured
				Wounds	Applied leaf paste externally on wounds once daily till cured
112	<i>Jatropha curcas</i> L	Euphorbiaceae	Nepalam	Cuts	Make leaf paste and applied externally on cuts to control bleeding

113	<i>Jatropha gossypifolia</i> L	<i>Euphorbiaceae</i>	Chitti nepalam	Scabies	Leaf paste is applied externally on the affected part once daily till cured
114	<i>Justicia adathoda</i> L.	Acanthaceae	Addasaram	Coug	100ml leaf decoction is given along with honey internally morning and evening to get relief from cough.
115	<i>Justicia procumbens</i> L	Acanthaceae	Papadaku	Arthritis	20 g of whole plant is ground and boil it in 100ml of coconut oil for five minutes and apply externally on the affected part till cured
116	<i>Lagerstroemia parviflora</i> Roxb	Acanthaceae	Chennangi	Cracked sole	Apply leaf paste on the affected part once in night before sleep till cured
117	<i>Lannea coromandelica</i> (Houtt.) Merr	Anacardiaceae	Gumphena	Dysentery	10ml stem bark juice is given internally once daily for 2-3 days
118	<i>Lantana camara</i> L	Verbenaceae		Dysentery	10ml stem bark juice is given internally once daily for 2-3 days
119	<i>Lantana camara</i> L	Verbenaceae	Murikimalle	Cuts and wounds	Grind handful leaves with turmeri and it is applied externally twice daily 2-3 days.
120	<i>Lawsonia inermis</i> L	Verbenaceae		Cuts and wounds	Grind handful leaves with turmeri and it is applied externally twice daily 2-3 days.
121	<i>Lawsonia inermis</i> L.	Lythraceae	Gorintaku	Arthritis	Make paste out of stem bark and apply this paste externally once daily for two weeks.
122	<i>Leonotis nepetiifolia</i> (L.)	Lamiaceae	Rana bheri	Skin allergy	Apply root paste on affected part once a day for three days.
123	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Thummi	Abdominal pain	Whole plant is boiled into 500ml water for 5 minutes. 20ml of this filtered decoction is given for one time
				Psoriasis	Leaf juice is boiled in coconut oil and it is applied externally on the affected part once daily till cured.
124	<i>Tamarindus indica</i> L	Caesalpiniaceae	Chintha chettu	Cracked sole	Fruit pulp is applied externally on affected part once daily till cured.
125	<i>Terminalia arjuna</i> (Roxb. ex D. C.) Wt. & Arn	Combretaceae	Tella maddi.	Anaemic:	1 tea spoon powder is given with one glass of water or cow/goat milk for three months.

				Cardiac tonic	Stem bark extract is given daily to strengthening the hart functions as a cardiac tonic.
126	<i>Terminalia bellerica</i> (Gaertn)Roxb	Combretaceae	Tandra	Stomach pain	One tea spoonful seed powder is given with sugar or honey thrice a day for two days.
127	<i>Terminalia chebula</i> Retz	Combretaceae	Karaka chettu,	Dry cough	One tea spoonful fruit powder of <i>Terminalia chebula</i> is given twice daily for three days.
128	<i>Tribulus terrestris</i> L.,	<i>Zygophyllaceae</i>	Palleru	Impotency	Ground 10gseeds with 10g dry roots of <i>Withania somnifera</i> to make powder. One tea spoonful powder is given internally daily with milk during bed time for 30 days.
129	<i>Tridax procumbens</i> L.	Compositae	Nalla alam	Fresh cuts	Leaves paste is applied along with turmeric powder twice daily for 3-4 days.
130	<i>Trigonella foenum-graecum</i> L.	Fabaceae		Diarrhoea	5g Seeds are chewed to cure diarrhoea twice daily for two days.
131	<i>Tylophora indica</i> (Burm.f.) Merrill	Asclepiadaceae	Meka meyani teega	Venereal disease	Ground 7 leaves along with 7 fruits of black pepper to make pill. 5 g size of pill is given orally once a day for 5 days.
132	<i>Vitex negundo</i> L.	Verbenaceae	Vayilaku	Paralysis	Ground 50g leaves along with 2g of <i>Piper nigrum</i> , one fruit of <i>Woodfordia fruticosa</i> , and 7leaves of <i>Piper betle</i> and make a bolus. 20 g bolus is given in the morning of every alternative day. Avoid eating fish during medication
				Arthritis	Leaves paste is applied externally once daily till cured.
133	<i>Wattakaka volubilis</i> (L. f.) Stapf	Asclepiadaceae	Bandi gurija	Swelling	Leaves are decocted with water and applied externally on the affected part when it is slightly warm.
				Arthritis	50 ml leaves decoction is given orally once daily for 30 days.
134	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Aswagandha	Impotency	20g root powder is given with one glass of cow milk before sleep at night daily for 30 days.
				Back ache and muscular pains	10 g root powder is given with honey once daily for 15 days
				Fitness	10 g root powder is given with honey once daily for 15 days

				Tumours	Apply castor oil to the green leaves and heat them on fire and placed them on the affected part once daily for 3-4 days
				Obesity	roots are fried with ghee and given to the patient for 30 days.
135	<i>Woodfordia fruticosa</i> (L.)	Lythraceae	Jaji vayila	Gas trouble	10 ml of flower juice is given internally once daily for two days.
				Paralysis	: Ground 1 fruit along with 50g leaves of Vitex negundo, 2g of Piper nigrum, and 7 leaves of Piper betle to make a bolus. 20 g bolus is given in the morning of every alternative day for a month. Fish meat is avoided during the course of treatment
136	<i>Wrightia tinctoria</i> Br	Apocynaceae	Tellapala	Psoriasis	Leaves are decocted with coconut oil and applied externally once daily till cured
137	<i>Zingiber officinalis</i> Rosc	Zingiberaceae	Allamu	Cough	5ml extract of fresh rhizome is given internally in the early morning for 3 days.
				Sexually transmitted disease	1 g rhizome is decocted along with 2 g of Piper nigrum 10g root bark of Plumbago zeylanica, 1 seed of Semecarpus anacardium in half litre water, 20 ml decoction is given internally by adding tea spoonful of cow ghee once daily for 3 days.
138	<i>Zizyphus oenoplia</i> (Linn.)	Rhamnaceae	Pariki	Fever	Crush 5 g stem bark with equal quantity stem barks of Albizia amara, Azadirachta indica, Capparis zeylanica, Ricinus communis, and Cassia fistula and boiled in 100ml water for 15 minutes. 20 ml is given orally twice daily for two days.

## DISCUSSION:

The present study deals with the documentation and evaluation of medicinal plants used by the tribal people in the primary health care in and around Vikarabad and Dharur mandals of Ranga reddy Dist, T.S. About 40 villages have been chosen for the study and yielded a valuable knowledge of plant medicine of the locals. The herbal remedies mentioned are of certain general and specific ailments, such as snake bite, cough, and scorpion sting, head ache, back pain body pains, cold, dandruff, dog bite, fever, hair loss, jaundice, inflammation, joint pains, lice killer, skin ailments, ear pains, eye problems, red and white discharge in women, loss of semen in urine in men, tooth ache and gum

problems, stomach ache, bone fractures, conception and menstrual problems and wound healing. The resource persons are mostly lambadas, chenchus and some elderly people of local villages. The people practice and cure almost all ailments or diseases or wounds very effectively with simple locally available plants with out involving much financial commitment, in majority of the cases they treat freely. The study started in the month of May, 2012 and went on up to May, 2014. It revealed valuable information about the ethno medicine of the local tribals of this Dist. It is invaluable and having immense potential for the primary health care of the people in this area. About **138 plant species of 36 families** have been documented in this study and an itinerary is prepared according to alphabetical order of the diseases, families along with the vernacular names, botanical; names, drug formulation of drug formulation and methods of drug administration as told by the herbal practitioners. The Practitioners also felt that of late their practice is dwindling due to non availability of plants which were plenty till recently, due to loss of habitat and forest cover in this area. The method of herbal practice is also decreasing as the practitioners are not passing the knowledge to the next generations before their death and also due to lack of proper written documentation. They fell that proper documentation of the knowledge of herbal practitioners should be taken up immediately in all the areas of the Dist before it disappears and conservation of medicinal plants in the area is very much in need. The present study elicits the importance of local herbal practices and availability of medicinal plants in the area, which will help in self sufficiency for their primary health care practices. Though this is a small inventory which helped in identifying the gravity of the situation of loss of medicinal biodiversity of the area and subsequently non availability of the treatment by the herbal practitioners to the local poor people of the area, unless other wise the conservation and afforestation practices are taken. The present type of survey documentation must be continued involving many more villages and traditional practitioners so that we can have a concrete picture of the richness of the medicinal flora and as well as the availability of folklore medicinal treatment to the local people.

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# REVIEW OF RESEARCH

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## TRADITIONAL PRACTICES AGAINST VETERINARY AILMENTS IN VIKARABAD AND ITS SURROUNDINGS, RANGAREDDY DISTRICT, TELANGANA STATE, INDIA

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### ABSTRACT: -

**D**ifferent animal ailments and disorders were studied in Vikarabad and surrounding areas including Marpalle, Mominpet, Nawabpet, Vikarabad, Pudur, Kulkacherla, Doma, etc., Cattle ailments were found to be widespread in the Villages, Gudems, Hamlets and



Thandas of Vikarabad, Ranga Reddy District, Telangana. Different plants and their parts were used to cure various disorders. Application of medicinal potential of one plant to different diseases was also noticed. Different types of recipes are made by the local traditional healers and used to cure the cattle diseases.

**KEYWORDS:** Vikarabad, Veterinary ailments, Traditional medicine, Medicinal Plants.

### INTRODUCTION :

Ranga Reddy district is one of the specific places in Telangana state under different climatic conditions, and having rural and sub-urban people. Vikarabad is located in western part of Telangana. It lies in the east longitudes 77.9048° and north latitudes 17.3364°. Ranga Reddy district is divided into 3 revenue divisions, 37 mandals, and 870 revenue villages. The district is bordered by north Medak district, to the east Nalgonda district, to the west Karnataka south side by Mahaboobnagar district respectively. The population is calculated in 2011 is 52, 96,396 lakhs and its geographical area is about 7,493 Sq. Km. Vikarabad, Ranga Reddy district is also having fertile soil for cultivation i.e., vegetables, root crops, flowers, leafy vegetables etc. Most of the Vikarabad and its surrounding people are depending on agriculture, rearing indigenous cattle, goat and sheep. Agriculture is the main source for their lively hood. The cattle, sheep, goat and other domestic animals may get the disorders seasonally (N Ramakrishna and Ch. Saidulu 2014), traditional healers are available in the local areas, who know about treatments of these diseases with local medicinal plants and their parts. Loss of their livelihood is affected due to the changes in social environment and traditional healers are losing their interest in veterinary medicinal practices (KN.Reddy et, al 1998). Vikarabad and surrounding villages, gudems, thandas and hamlets' people depend on cattle, goat, sheep and buffaloes rearing. Particularly some of the communities like golla, kurma live as shepherds and some are as farmers. When the people get the health problem of their cattle, sheep and goats, they approach their nearer healers place in the surroundings. Traditional healers of ailments of the local cattle, sheep, goats, cows, buffaloes and other animals are known as 'vaidikudu'.



## METHODOLOGY

A study on the medicinal plants usage by traditional healers, curing the veterinary diseases in Vikarabad and its surroundings was organized during 2014-2016. The shepherd and cattle rearing people know their regular and seasonal diseases occurring in the area. The medicinal plants have been identified with local names and scientific names with the help of herbarium (MS.Khan 1953). The local traditional healers are mostly men, who belong to kuruma and yadava (Golla) communities. The traditional healers' treatments are described with respect to various ailments using

different plants (KN Reddy et.al 2010). They use the locally available medicinal plants and their parts to cure the diseases (Jain, SK.1999, Hemadri.K 1994). The information was collected by interaction with traditional healers and observation during the treatment (N.Sriramulu et.al.,2013). The administered dosage forms were identified and determined by the healers by using a scalewhile preparing the drug. The medicinal plants have been collected and identified with confirmed herbarium.

## ENUMERATION:

The collected information of veterinary disorders/ailments and their treatments by traditional healers using various medicinal plants in the Vikarabad and its surroundings was documented. The medicinal plants are enumerated by traditional healers by local names (vernacular name) and the data was recorded with scientific names and their uses in animal treatments.

**1. Anorexia:** *Canthium parvilorum* Lam. (China balusu)-About 50g of bolus prepared by crushing fresh leaves given internally for 2 days. *Curcuma longa* L.( Pasupu)- About 25g of fresh rhizome along with handful leaves of *Pergularia daemia* and grind it then feed daily once for 2 days. *Pergularia daemia* (Forssk.) Chiov.( Gutaguta aaku)- About 25g of *Curcuma longa*, then grind 50g of leaves and mix well then feed once in a day for 2 days.

**2. Bloat:** *Butea monosperma* (Lamk.) Taub (Mothuga, Moduga)- Across the mouth tied stem layer of *Butea monosperma* keep for whole day and then removed. *Tephrosia purpurea* (L) Pers.,( Vempali,)- About 200ml of fresh root extract along with 500ml of water given internally in a single dose. *Tylophora indica* (Burm.f.) Merrill (Meka meyani teega )- About 50ml of leaf juice is given along with 200ml of water twice in a day until cured.

**3. Diarrhea:** *Abutilon indicum* (L.) Sweet.( Botla benda, Thutturu benda, Pachabotla)- Administered 100ml of stem bark extract twice in a day for 3 days. *Ageratum conyzoides* L.( Ganagaju, Sahadevi)- For adult animal drench with 100ml of leaf juice twice in a day till cured. *Ailanthus excelsa* Roxb.( Pedda manu Peethiri manu)- Mix and grinded 50g of stem bark with 10g of *Curcuma longa* into poultry feed to cure poultry diarrhoea. Feed this mixture once in a day for 3 days. *Bambusa arundinaceae* (Retz.) Willd.(Elithe, Veduru, Mulla Veduru) -Feed leaves to the cattle daily once for 2 days. *Bombax ceiba* L.( Buruga, Mulluburuga, Kondaburuga)-About 50g of crushed stem bark with 500ml of water given internally twice in a day for 3 days. *Bridelia montana* Willd.( Panchothkam)- About 30ml of stem bark extract given internally twice in a day until cured. *Bridelia retusa* (L.) Spreng.( Mulumaddi)- About 20ml of stem bark extract given orally along with one glass of water twice in a day for 2 days. *Careya arborea* Roxb.( Dudippa)- The extract from stem bark about 50ml is given internally twice in a day for 3days. *Cassia fistula* L.( Rela)- About 50g of stem bark along with 50g of Jaggery grind them and it is given as pills orally twice in a day for 2 days. *Cassia tora* L.( Tagarisa, Thydanta)- Drenched with solution prepared by 10g of seeds and one glass of water mix and grind, then after given twice in a day for 3days. *Celosia argentea* L.(Gunugu, Bathukamma puvvu.)- About 10g of seed powder mix into 500ml of buttermilk and drenched twice daily for two days. *Grewia taelifolia* Vahl(Jivilike, Pedda Jana,)-About 50ml of stem bark juice given internally

daily once until cured. *Zizyphus mauritiana* (Gangaregu, Regu)- About 100ml of fresh stem bark juice given internally daily twice for 3 days.

**4. Dysentery:** *Helicteres isora* L. (Nulithada)- Drenched 50ml of fresh stem juice daily once for 3 days. *Holarrhena pubescens* (Buch.-Ham.) Wall. Ex G. Don (Nallapalagodisa)- Large animals can be fed by taking 50g of stem bark juice or bolus twice in a day for three days. *Wrightia tinctoria* Br. (Ankudu, Tellapala kodise)- Fresh stem bark juice of 100ml is drenched daily twice for three days.

**5. Fever:** *Centella asiatica* (Linn.) Urban. (Saraswati aku)- Decoction prepared with whole plant. About 100ml of decoction is drenched (give forcibly) twice in a day for two days. *Occimum sanctum* L. (Thulasi)- About 100ml of leaf juice mixed with 1g of black pepper powder is given orally twice in a day for 3 days. *Soymida febrifuga* (Roxb.) A. Juss. (Somi)- About 100ml of stem bark juice given internally daily once until cured. *Syzigium cumini* (L.) Skeels. (Neredu)- Grinded 50g of stem bark of *Syzigium cumins* along with equal amount of leaves of *Ocimum sanctum* and 25g whole plant of *Andrographis paniculata* and make bolus. About 30g of bolus is given internally daily twice until cured.

**6. Food poison (Naamu) (HCN-Hydrocyanic acid/ Prussic acid):** *Annona squamosa* L. (Seethaphal)- When the cattle take young leaves of jowar (*Sorghum vulgare*) during early summer season, the leaves become poison in their stomach, to avoid this prepared pills by crushing the leaves of *Annona*, made it as 30g of pills then these are given orally twice in a day.

**7. Foot rot:** *Cleistanthus collinus* (Roxb.) Bth. ex Hook. f. (Billa godisa,) - *Soymida febrifuga* is crushed along with stem bark and then kept this mixture into wet mud pit and allows the affected animal to step into it for 15 minutes, repeatd this procedure till recovered / cured. *Pithecelobium dulce* Benth. (Seema chintha)- Collected stem bark along with stem bark of *Acacia nilotica* and grinded to make paste. Then boiled this paste in water for 5 minutes. Applied on the affected part daily once until cured. *Soymida febrifuga* (Roxb.) A. Juss. (Somi)- Collected the stem bark of *Soymida febrifuga* and *Cleistanthus collinus* and kept in wet pit. Then allowed the affected animals to stand on it daily twice for 15 minutes until cured.

**8. Haematuria:** *Abutilon indicum* (L.) Sweat. (Botla benda, Thutturu benda, Pachabotla)- Prepared 50g of fresh stem bark and 10g of *Cuminum ajminum* grinded and mixed into 500ml of water. Given 250ml of prepared juice for sheep and goats per day. *Aerva lanata* (L) R.Br. (Pindikura)- Prepared 100 ml of root decoction and it is mixed with 10g powder of *Cuminum cyminum*. 30ml of this solution is drenched to the cattle twice in a day for 3 days. *Bauhinia racemosa* Lamk. (Aree, Aare chettu)- About 50g stem bark grinded thoroughly with 5g of black pepper. Then given 30g of prepared powder internally with water twice in a day for 3 days. *Hemidesmus indicus* (L.) Schult(Sugandi pala)- Drenched 50ml of root juice is given orally daily twice until cured.

**9. Bone Fracture:** *Albizia amara* (Roxb.) Boivin (Narlingi)- After setting bones applied leaf paste on fractured place and tied cloth. Did not remove till 15 days. *Bombax ceiba* L. (Buruga, Mulluburuga, Kondaburuga)- First setup the bone and wrap with cloth then tied with stem fiber of *Beautea monosperma* tightly prepared 50ml of stem bark extract with equal quantity of goat milk is given only once in a day for 3 days. *Boswellia serrata* Roxb. (Andugu)- After setting up of bone applied milk sap of *Ficus hispida* on the fracture part. Stem bark properly grinded and mixed it into 500ml of goat milk drenched only once in a week for 3 weeks. *Ficus hispida* L. f. (Brahma medi)- After setting up the bones applied latex on the affected part. Wrap the fractured bone with wool and tied around with cloth. Given 100ml of stem bark juice of *Boswellia Serrata* along with 500ml of goat milk internally weekly twice (Thursday and Sunday) for 3 weeks. *Holoptelea integrifolia* (Roxb.) Planch. (Nemalinara, Nemalichettu)- Drenched 50ml of stem bark juice mixed into 1 glass of goat milk twice in a week for 3 weeks.

**10. Intestinal worms:** *Aristolochia bracteolata* Lam, (Gadida gadapaku, Gadida gadda para)- About 50g of

Cuminum cyminum, 10g of Pimpinella anisum mixed with grinded leaves. The prepared medicine given orally twice in a day for one day only. Dosage: 60g for adult cattle and buffaloes, 30g for sheep and goats. *Enicostemma axillare* (Lam.) Raynal(Resika)- Prepared bolus by grinding leaves. About 30g sized bolus given to the animal internally once in a day for 3 days. *Mucuna pruriens* (L.) DC. (Tita kogila, Teega dula gondi)- about 2g of bristles mixed into 50ml of butter milk as a single dose given orally.

**11. Mad dog bite (Pichi kukka katu):** *Acacia farnesiana* (L.) Willd. (Kasturi tumma, Muriki tumma)- About 100ml of stem bark juice is given daily twice for 3 days.

**12. Maggot wounds:** *Abutilon indicum* (L.) Sweet. (Botla benda, Thutturu benda, Pachabotla)- Around the animal neck wrap stem bark fiber and let it for 3 – 4 days. *Acanthospermum hispidum* DC. (Kanigera alam, Guntakalagaraku)- Prepared a fine paste with leaves and is applied on wounds daily once until cured. *Biophytum sensitivum* (L.)DC., (Muduchu thamara)- Applied whole plant paste locally on wounds once in a day until cured. *Ficus bengalensis* L. (Marri)- Applied milk sap on the wounds to kill maggot daily twice for 2 days and then the next day apply turmeric powder along with neem oil twice in a day for 3 days.,101, *Gloriosa superba* L. (Venkayya puvvu, Nabhi pulu)- Applied corm paste externally on wounds once in a day for three days. *Strychnos nux-vomica* L., (Mushti)- Applied stem bark paste externally on the affected part daily once until cured.

**13. Mange:** *Clerodendrum multiflorum* (Burm. f.) O. Ktze.( Thakkali chettu)- Applied leaf paste on the affected part externally daily once for 3 – 4 days. *Cryptostegia grandiflora* (Roxb.) R.Br(Adavi pala teega)- Prepared the paste from leaves and is applied externally on the affected part daily once for 3-4 days. *Feronia elephantum* Correa (Velaga, Velama)- Applied leaf paste on the affected part until cured.

**14. Paraplegia:** *Argemone mexicana* L.( Ulli vinjara, Yerrickusuma)- Collected the leaves of *Argemone mexicana*, *Phyllanthus reticulate*, *Clerodendrum phloimidis*, *Tylophora indica* and extracted the juice. Given 100ml of juice along with 300ml of butter milk daily once for 3 days. *Caesalpinia bonduc* (L.) Roxb. (Gacha)- About 100ml of leaves extract and mixed into an equal amount of goat milk and drenched daily once in the morning for 2 days. *Clerodendrum multiflorum* (Burm. f.) O. Ktze.( Thakkali chettu)- Given equal amount of leaves of *Phyllanthus reticulate*, *Clerodendrum multiflorum*, *Argemone mexicana*, *Tylophora indica*, grinded them to extract juice. Daily once given orally 100ml of juice along with 300ml of butter milk for 3 days. *Phyllanthus reticulatus* Poir. (Nalla puskari, Pulisheru)- Crushed 10g of leaves each of *Phyllanthus reticulatus*, *Tylophora indica*, *Argemone Mexicana*, *Clerodendrum phloimidis* to extract juice. Given 100ml of extract along with 300ml of buttermilk daily once for 3 days.

**15. Sprains and swellings:** *Calotropis gigantea* (L.) R.Br.(Jilledu, Nalla jilledu)- Milk juice which is extracted from plant is applied externally on swelling area twice in a day i.e., morning and evening until cured. This treatment is suitable for all types of animals. *Cryptolepis buchananii* Roem. & Schult.( Adavi pala teega)- Swellings: To cure from swelling applied latex on the affected part daily once until cured. *Dodonaea angustifolia* L.f., Suppal (Puli vilu)- Applied leaf paste on the affected part daily once until cured. *Euphorbia tirucalli* L.(Piddakajameda, Manchi jemudu)- Applied milk sap externally on the parts which are affected daily once until cured. *Plumbago zeylanica* L. (Tella chitramulam)- Prepare root paste and boil it in sesame oil for 15 minutes and applied externally on the affected area daily once until cured. *Ricinus communis* L. (Amudam)- Daily once done massage and applied stem bark paste externally on affected part till cured. *Vitex negundo* L. (Vayilaku)- Applied leaves extract decoction with 500ml of sesame oil daily once until cured. *Wattakaka volubilis* (L. f.) Stapf. ( Bandi gurija)- Roasted the leaves and placed them on affected area when they are slightly warm once in a day for 3 days.

**16.i) Stomach pain:** *Citrullus colocynthis* (L.) Schrad.(Eetiputcha, Paparabundama, Verri pucha kaya)- About 5ml of fruit extract is mixed into 50ml of water and drenched only once in a day for one day only. *Cleome gynandra* Linn., (Thalati, Vamiti)- About 50g of crushed roots along with 1 onion and 10g of *Trachispermum ammi* and

mixed into 200ml of rice water and 200ml of solution is drenched twice daily for 3 days. *Cuminum cyminum* L. (Jeela karra/ Jeera)- Prepare 10g of each of *Cuminum cyminum*, leaves of *Aristolochia bracteolata*, *Pimpinella anisum* and grinded them all and then mix in 1 glass of water. Drench one glass of juice internally two times in a day for three days.

**ii) Stomach pain:** Prepare handful young leaves of *Vitex negundo* 50g of leaves of *Tylophora indica*, 50g of *Cuminum cyminum*, 2 cloves of *Allium sativum* ground them together and mix with 750ml of warm water. About 750ml of this medicine should be drenched to cattle in a single dose. *Cyperus rotundus* L. (Thunga gaddi)- Sun-dry 10g of stem bark of *Holarrhena antidysenterica*, 10g of tuber, and 10g of *Zingiber officinalis* and prepared powder. Given internally 30g of powder along with 250ml of butter milk twice in a day until cured. *Enicostemma axillare* (Lam.) Raynal (Resika)- Prepared bolus by grinding the leaves along with same (equal) quantity of leaves of *Solanum melanginum*. For sheep and goats given 30g sized bolus internally three times in a day. *Semecarpus anacardium* L. (Nalla cheedi, Jidi)- Prepared 50g sized pills by using 3 seeds, grind well with 50g of jaggery. This pill should be given internally for 2-3 days. Precautions: As it is one day treatment. This medicine should not be repeated.

**iii) Stomach pain:** About 10g of *calcium carbonate* (lime) 2 seeds of *Semecarpus anacardium* are boiling in 500ml of water for 10 minutes. About 200ml of this water is given internally 2 times in a day. *Woodfordia fruticosa* (L.) Kurz(Jaji vayila, Jajuki)- To reduce pain drenched 50ml fresh stem bark extract in the morning and evening.

**17. Wounds:** *Cassia occidentalis* L.( Kasintha, Thangedu, Pedda chennangi)- Applied leaf paste externally daily once until cured. *Dalbergia paniculata* Roxb.(Pachari, Pacharugu)- Applied stem bark paste along with turmeric powder daily once until cured. *Lagerstroemia parviflora* Roxb. (Chennangi)- Applied leaf paste externally daily once until cured. *Lantana camara* L (Murikimalle)- Prepare handful leaves with salt and turmeric powder and ground them well. Applied this paste externally daily twice until cured. *Tribulus terrestris* L., (Palleru)- Applied plant paste externally daily once until cured. *Tridax procumbens* L. (Gayamkura, Belapaku, Nalla alam)- To cure wounds, prepared the paste from leaves and applied on it twice in a day until cured. *Zizyphus oenoplia* (Linn.) Mil, (Pariki)- Applied leaf paste on the affected part daily once until cured.

## RESULTS & DISCUSSIONS:

The traditional healers used different methods and administered fixed doses for different diseases. During the survey about 17 types of diseases and different treatments were studied, the highest number of treatments for diarrhea followed by stomach pain and other disorders. These diseases are controlled or cured by using different parts of the plants. Where the parts of the plants like leaves and bark used in different ways and also diseases cured with some other plant mixtures (KN Reddy et.al. 2010). Particularly animals face the problems during rainy season, like foot rot, intestinal worms, stomach pain, sprains & swellings, fever etc.

Traditional healers provide medicine in free of cost, and they won't expect anything from the local people. In Medak district bone fracture, diarrhea, stomach pain and swellings have been treated with different medicinal plants(KN.Reddy et.al.,2010) . Where as in Vikarabad bone fracture was treated with *Butea monosperma*(Lamk) Taub, bark (N,Ramakrishna & Saidulu 2014). The local people survive with their occupations and agricultural practices with the help of cattle and buffaloes; hence they should develop the traditional medicinal practice which is carry forward from the ancestors. While interact with traditional healers, particularly elder practitioners expressed their experience, that they have been continuing ancestors' traditional medicinal practices (Padma.P and PR.Reddy1999, KN.Reddy 2006). Due to the lack of knowledge on nature the younger generation is not showing any interest in acquiring the indigenous knowledge and its culture. So it is very essential to improve the knowledge on these traditional medicinal practices and the medicinal plants as it is a no cost practice which ultimately uses for the poor people in suburban areas. This medical practice also is very effective and has zero side effects.

**CONCLUSIONS:**

Vikarabad, a location with fertile red soil favored diversified medicinal plants. Cattle rearing, being livelihood of various communities are depending on traditional veterinary healers. Cattle ailments were common due to seasonal variations, where locally available traditional healers play their role, by using medicinal plants. Successful handling of veterinary ailments by local traditional healers and upholding the knowledge of medicinal plants is appreciable. The knowledge of Vikarabad traditional veterinary healers' medication was recorded to preserve in this paper.

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## Original Research Article

# A Survey of Plant Crude Drugs in Folklore from Komram Bheem District, Telangana State

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## ABSTRACT

### Keywords

Folklore medicinal practices, Plant crude drugs, Thirayani Mandal

Folklore medicinal practices of plant crude drugs for various ailments recorded from Tiryani mandal Nayakapu gudam and Gundu gudam, Komram Bheem district, Telangana State. The particulars of plant parts used, mode of preparation and administration are given, About 50 crude drugs, either single, bi- or multi –component preparation are used for various ailments. This information provides immense potential for study of relationship of the active principles of the drugs with the ailments concerned. In all 51 plants species belonging to 31 families used in primary health care are detailed.

## Introduction

The inhabitants are largely agriculturists engaged in subsistence farming, and labors. The whole area constitutes plains with agricultural tracts interrupted by boulders, open scrub and streams of undefined canals. The red fine grain sandy soil of the region is suitable for luxuriant growth of medicinal plants. The people of this region depend on folklore crude drugs practices for primary healthcare. The flora of this region is inadequately explored ethno botanically. However, there is information pertaining to ethno medicinal practices on diseases of cattle and bone fractures from this region. In view of this, the present study of the use of crude drugs for human ailments in this area was undertaken.

## Materials and Methods

Field trip was conducted to Thiryani Mandal of Komram Bheem District, Telangana State during 2004 – 2008, covering all seasons. The ethno medicinal data were recorded following the standard procedures by interacting with as many as 8-10 herbal practitioners and elders of the village with the knowledge of herbal medicine. The information gathered was cross-checked. Plant specimens were collected during the survey in different seasons and herbarium specimens were prepared and identified with the help of local floras. The voucher specimens were deposited in the Herbarium, Department of Botany, SAP Degree College Vikarabad. Vikarabad District, Telangana State.



## Results and Discussion

The present paper details information on 51 plant species belonging to 37 different families used as herbal remedies in primary health care by the Tiryani Mandal Nayakapu gudam and Gundu gudam Komram Bheem district, Telangana State, India. The data indicate that there is still valid and active knowledge of the therapeutic uses of wild plant species growing in the region.

The plants used are found growing spontaneously and available in the vicinity and in many cases are the immediately available therapeutic resources. Most of the herbal remedies comprise one or, few with two and rarely three or more in a preparation thus providing ample opportunities to study their active principles in relation to the ailments concerned. The herbal remedies

mentioned are against post-delivery infections, lumbago, white and red discharges in women, body pains and swelling, tooth and gum affections, muscle catch and sprains, bone fracture, fever, stomach ache, eye infections and cataract, snake bite and scorpion sting, cough and asthma, ear aches, head ache and migraine, boils and abscesses, dysentery, rheumatic pain, liver disorders, diabetes, piles, as aphrodisiac, for improvement of general strength and sexual vigor, etc.

Herbal remedies provide essential health care, which the village people of this region utilize to immense benefit. Although these remedies do not find esteem compared to modern medicine, their efficacy is claimed to the high. An in-depth study, mainly experimental with clinical efficacy of these drug preparations is essential in many cases.

## Observation Table

Sl. No.	Plant Name	Family name	Telugu name	Parts used	Formulation
1.	<i>Abutilon indicum</i> (Linn.) Sweet	Malvaceae	Tuttur benda	Stem, barks	<i>Abutilon indicum</i> (Linn.) (Malvaceae) Sweet; <i>Ventilago calyculata</i> Tul. (Rhamnaceae), <i>Alangium salvifolium</i> (Linn.f.) (Alangiaceae); <i>Dichrostachys cinerea</i> (Linn.) Wight. & Arn. (Mimosaceae); (The stem barks of these plants in equal proportions are powdered along with home remedial ingredients (+) and given 3-5 g per day dose to women after delivery 5-6 times to prevent infectious diseases.
2.	<i>Achyranthes aspera</i> Linn	Amarantaceae	Uttareni	Roots, stems	<i>Achyranthes aspera</i> Linn (Amarantaceae) <i>Strebilus asper</i> Lour. (Moraceae) Barrenk- The roots of <i>A.aspera</i> and stems of <i>S.asper</i> in equal proportions are powdered and used as tooth powder for strengthening gums and teeth.
3.	<i>Aegle marmelos</i> (Linn.) Correa ex Roxb	Rutaceae	Maaredu	leaves	<i>Aegle marmelos</i> (Linn.) Maaredu Correa ex Roxb (Rutaceae) -- After taking 9 rounds the tree the leaves are plucked and dropped into hot water with which bath is taken to get relief from body pains.
4.	<i>Ailanthus excela</i> Roxb	Simarubaceae	Pedda manu	leaves	<i>Ailanthus excela</i> Roxb (Simarubaceae) Peddamunu----The leaves are heated and the poultice is applied in muscle sprains.
5.	<i>Albizzia amara</i> Boiv	Mimosaceae	Narlangi	leaves	<i>Albizzia amara</i> Boiv (Mimosaceae) Leaf paste in goat's milk is applied externally over fractures 4-5 times for fast healing.

6.	<i>Albizzia lebbek</i> Benth.	Mimosaceae	Tella dirisena	bark	<i>Albizzia lebbek</i> Benth (Mimosaceae). Telladirisena ---- One or two spoonful of aqueous extract of the bark is given 3-4 times to adults for relief in stomach pain.
7.	<i>Aloe barbadensis</i> Mill	Agavaceae	Kalabanda	leaves	<i>Aloe barbadensis</i> Mill (Agavaceae) Kalabanda--- -- Fleshy portion of the leaf mixed with sugar is given orally as coolant and for vitality to adults and pregnant women
8.	<i>Andrographis panicalata</i> (Burm. f.) Wall. Ex Nees	Acanthaceae	Nela vemmu	leaves	<i>Andrographis panicalata</i> (Burm. f.) Wall. Ex Nees (Acanthaceae) Nelavemu ---The leaf aqueous extract is given orally a teaspoonful twice a day for three days as an effective cure for fevers and stomachache in adults and children.
9.	<i>Argemone Mexicana</i> Linn	Papaveraceae	Jeripothu chettu	Latex	<i>Argemone Mexicana</i> Linn (Papaveraceae) Jeripothuchettu. Latex from the plant is applied to red burning eyes and also for cataract. Leaf paste is applied in scorpion sting for quick relief.
10.	<i>Aristolochia indica</i> Linn	Aristolochiaceae	Naga saram	root	<i>Aristolochia indica</i> Linn (Aristolochiaceae) Nagasaram. ---The root tuber is ground with little water and the paste is applied to eyes for relief from poisoning in snakebite.
11.	<i>Atylosia</i> sp.	Fabaceae	Sanna Chappidi aku	leaves	<i>Atylosia</i> sp. (Fabaceae) --- Leaf aqueous extract is given orally, a teaspoonful 2-3 times in constipation in adults.
12.	<i>Balanites aegyptiaca</i> (Linn.) Delile	Balanitaceae	Gara	Stem bark	<i>Balanites aegyptiaca</i> (Linn.) (Balanitaceae) Gara Delile --The ground paste of the stem bark is used to poison fish.
13.	<i>Bauhinia racemosa</i> Lam	Caesalpiniaceae	Aare chettu	Stem Bark	<i>Bauhinia racemosa</i> Lam (Caesalpiniaceae) Aarechettu ---- The aqueous extract of stem mixed with peper is given 2-3 times to women to prevent white and red discharges
14.	<i>Calotropis gigantea</i> (Linn.) Ait. F.	Asclepiadaceae	Tella jilledu	Flowers, Roots	<i>Calotropis gigantea</i> (Linn.) Ait. F. (Asclepiadaceae) --- White flowers eaten in betal leaf to get relief in chronic cough. The roots are crushed and the aqueous extract is applied externally and also taken orally for snakebite.
15.	<i>Calotropis Procera</i> (Ait.) Ait. F.	Asclepiadaceae	Erra jilledu	Latex	<i>Calotropis Procera</i> (Ait.) Ait. F. (Asclepiadaceae) Errajilledu ---The latex is applied to navel and limewater sprinkled over it for relief in abdominal sprans.
16.	<i>Carissa spinarum</i> Linn.	Apocynaceae	Kalimi	Roots	<i>Carissa spinarum</i> Linn. (Apocynaceae)KalimiDodonaea viscose (Linn.) Jacq (Sapindaceae) Pulivavili. – The roots of two plants in equal proportions are ground by adding little water along with home made ingredients (+) and given orally to en as aphrodisiac.
17.	<i>Cassia auriculata</i> Linn.	Caesalpiniaceae	Tangedu	Leaves	<i>Cassia auriculata</i> Linn. (Caesalpiniaceae) Tangedu --Tender leaves are ground thoroughly with sulphur and mercury and applied to skin in eczema and scabies. The aqueous extract of tender leaves given orally is an effective remedy for women in lumbar pains, stomach pain and white discharge and for vitality
18.	<i>Catunaregam spinosa</i> (Thunb.)	Rubiaceae	Manga	Flowers	<i>Catunaregam spinosa</i> (Thunb.) Tirvengadam syn. <i>Randia dumetorum</i> (Retz) poir. In Lam.

	Tirvengadam				(Rubiaceae) Manga ---The juice of crushed flowers, 2-3 spoonful, is given once a day for 3-4 days to women as an effective remedy in white discharges.
19.	<i>Celosia argentea</i> Linn	Amarantaceae	Gunugu	Leaves	<i>Celosia argentea</i> Linn (Amarantaceae) Gunugu - The paste of the leaves is applied in skin affections and insect bite for relief.
20.	<i>Chloroxylan swietenia</i> Dc.	Rutaceae	Billudu	Stem, Bark	<i>Chloroxylan swietenia</i> Dc. (Rutaceae) Billudu --- The stem bark is powdered and mixed in coconut oil and applied to hair for removal of dandruff.
21.	<i>Cissus pallida</i> (Wight & Arn) Pranch.	Vitaceae	Konda gummadi	Root, tubers	<i>Cissus pallida</i> (Wight & Arn) Pranch. (Vitaceae) The aqueous extract of root tubers taken in a glass of toddy (sap) obtained from <i>phoenix sylvestris</i> Roxb. Early in the morning on empty stomach and at noon for 2-3 days for control of sexual diseases.
22.	<i>Cleome viscosa</i> Linn.	Cleomaceae	Talari		<i>Cleome viscosa</i> Linn. (Cleomaceae) Root aqueous extract (3-4 drops into ear) is used for severe ear pain as an effective remedy.
23.	<i>Clerodendrum phlomidis</i> Linn. F.	Verbenaceae	Takkali	Leaf	<i>Clerodendrum phlomidis</i> Linn. F. (Verbenaceae) Leaf is crushed under teeth for effective and quick remedy for tooth pain. Crushed leaf paste is applied externally in painful swelling.
24.	<i>Coccinia indica</i> Wight & Arn.	Cucurbitaceae	Kakidonda	Leaves	<i>Coccinia indica</i> Wight & Arn. (Cucurbitaceae) -- - The extracted juice of the leaves is applied over regions of muscle sprains and painful swellings for relief.
25.	<i>Cocculus hirsutus</i> (Linn.) Diels.	Menispermaceae	Dusari teega	Leaves	<i>Cocculus hirsutus</i> (Linn.) Diels. (Menispermaceae) Leaves are crushed and eaten for vitality and improvement of virility.
26.	<i>Cuminum cyminum</i> Linn.	Apiaceae	Jeelakarra	Stem bark and Seeds	<i>Cuminum cyminum</i> Linn. (Apiaceae) Jeelakarra -- -The stem bark and seeds are ground and its decoction is given to women in white discharge; in burning micturition, and to men in turbid urination.
27.	<i>Datura metel</i> Linn. Syn. <i>Datura fastuosa</i> Linn.	Solanaceae	Nalla umetha	Leaf	<i>Datura metel</i> Linn. Syn. <i>Datura fastuosa</i> Linn. (Solanaceae) Leaf aqueous extract is applied externally for painful swellings.
28.	<i>Delonix regia</i> Rafin.	Caesalpiniaceae	Chiti kesaram	Leaf	<i>Delonix regia</i> Rafin. (Caesalpiniaceae) The leaves are heated and applied to head for relief in migraine.
29.	<i>Dichrostachys cinerea</i> (Linn.) Wight & Arn.	Mimosaceae	Velthuru	Bark	<i>Dichrostachys cinerea</i> (Linn.) Wight & Arn.(Mimosaceae) Velthuru <i>Abutilon indicum</i> (Malvaceae) Tutter Benda ----The aqueous extract of the fresh barks of these two plants is given orally once daily for a week in paralysis with benefit.
30.	<i>Dodonaea viscosa</i> Linn.	Sapindaceae	Pulivavili	Leaves	<i>Dodonaea viscosa</i> Linn. (Sapindaceae) --- The leaves are warmed and tied to head for relief in severe headache.
31.	<i>Echinops echinatus</i> Roxb.	Asteraceae	Brahma dandi	Roots	<i>Echinops echinatus</i> Roxb. (Asteraceae) Brahmadandi The decoction of roots is given 4-5 times in chronic cough and asthma as an effective cure.
32.	<i>Ficus benghalensis</i>	Moraceae	Marri	Roots,	<i>Ficus benghalensis</i> Linn. (Moraceae) Marrichettu

	Linn.		chettu	Seeds, Shoot Buds	a) Adventitious roots are directly eaten. B) Sugar candies or seeds of <i>Prunus amygdalus</i> Batsch are soaked in milky latex of the tree and taken 5-6 times early in the morning for sexual vigour. C) Shoot buds are shade-dried and powdered, taken a spoonful a day along with honey for a week to generate strength and sexual vigour.
33.	<i>Ficus religiosa</i> Linn.	Moraceae	Ravi chettu	Latex	<i>Ficus religiosa</i> Linn. (Moraceae) Ravi chettu -- The latex of the plant is applied over boils and abscesses 2-3 times with a paper plastered over it with a hold for quick dissolving and relief.
34.	<i>Gloriosa superba</i> Linn.	Liliaceae	Nabi	Root	<i>Gloriosa superba</i> Linn. Linn.(Liliaceae) The paste of ground root tubers is applied over boils and abscesses for quick and effective relief.
35.	<i>Grewia hirsuta</i> Vahl	Taliaceae	Jigilika	Bark	<i>Grewia hirsuta</i> Vahl (Taliaceae) --- Bark aqueous extract is given 2-3 times for effective cure in dysentery.
36.	<i>Gymnema sylvestre</i> R. Br.	Asclepiadaceae	Podapatri	Leaves	<i>Gymnema sylvestre</i> R. Br. (Asclepiadaceae)---- The juice of fresh leaves is applied to eyes for clear vision and for cataract. Dry leaves are burnt and smoked for good general health.
37.	<i>Hemidesmus indicus</i> R.Br.	Asclepiadaceae	Sugandha pala	Leaf	<i>Hemidesmus indicus</i> R.Br. (Asclepiadaceae) Sugandhapala ---- The leaf juice, 2-3 drops, mixed in mothers milk is applied to eyes in redness and burning, with good effect.
38.	<i>Holoptelea integrifolia</i> Planch.	Ulmaceae	Nemilinaru	Leaves	<i>Holoptelea integrifolia</i> Planch. (Ulmaceae) Nemilinaru ----The young leaves are ground and the paste is applied 4-5 times to fingers in whitlow for quick relief. The stem bark is crushed and applied over joints as an effective remedy in rheumatic pains.
39.	<i>Mimosa pudica</i> Linn.	Mimosaceae	Attapatta,	Roots Stembark	<i>Mimosa pudica</i> Linn. (Mimosaceae) Attapatta, roots: <i>Grewia hirsuta</i> Vahl (Tiliaceae) Jivilika. Stem bark: <i>Ocimum sanctum</i> Linn. (Labiatae) Tulasi: roots: <i>Ziziphus mauritiana</i> Lam.(Rhamnaceae) Renichettu. Stem bark: <i>Cordia dichotoma</i> Forst. (Boraginaceae) Irikichettu, stem bark --- The above plant parts in equal proportions along with few pepper seeds ground with water, extracted, filtered and given 2-3 spoonful orally for 3 days in severe dysentery as an effective remedy.
40.	<i>Opuntia dillenii</i> Haw.	Cactaceae	Palaka jemudu	phyllodes	<i>Opuntia dillenii</i> Haw. (Cactaceae) Palakajemudu --- The phyllodes are heated and bandaged over the body part for effective and quick removal of thorns.
41.	<i>Pavania odorata</i> Willd.	Malvaceae	Chitti benda	Leaves	<i>Pavania odorata</i> Willd. (Malvaceae) Chitti benda --- The leaves mixed with jiggery are ground and given orally for effective removal of thorns from the body.
42.	<i>Pergularis daemia</i> (Forsk.) Chiov.	Asclepiadaceae	Guttimitti	Leaves	<i>Pergularis daemia</i> (Forsk.) Chiov. (Asclepiadaceae) Guttimitti --- The leaf aqueous extract is given orally 2-3 times to children to treat dyspepsia and indigestion. Flowers are powdered with black pepper and given with

					mothers' milk for cough and asthmatic attacks in children and adults.
43.	<i>Plumbago zeylanica</i> Linn.	Plumbaginaceae	Chitra mulam	Root	<i>Plumbago zeylanica</i> Linn. (Plumbaginaceae) ---- The root paste is applied over snakebite and scorpion sting for relief.
44.	<i>Solanum nigrum</i> Linn.	Solanaceae	Budda gochi	Roots	<i>Solanum nigrum</i> Linn. (Solanaceae) ---- The roots along with home remedial ingredients (+) are powdered and given orally for bodily swelling due to liver disorders with good effect.
45.	<i>Solanum surattense</i> Burm.f.	Solanaceae	Rama mulaka	Fruits	<i>Solanum surattense</i> Burm.f. (Solanaceae) Ramamulaka --- The dried fruits are burnt and infected teeth exposed to smoke for quick relief.
46.	<i>Soymida febrifuga</i> A.Juss.	Meliaceae	Somichettu	Fresh Bark	<i>Soymida febrifuga</i> A.Juss. (Meliaceae) The aqueous extract of the fresh bark in toddy (sap) of <i>Phoenix sylvestris</i> Roxb. Is taken in fevers and for vitality.
47.	<i>Thespesia lampas</i> (Cav.) Dalz. & Gibs.	Malvaceae	Adavi benda	Roots	<i>Thespesia lampas</i> (Cav.) Dalz. & Gibs (Malvaceae) Adavibenda ---The dried roots, powdered and mixed with little sugar, are taken orally for a week for controlling diabetes
48.	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook. F. & Thoms.	Menispermaceae	Tippateega	Leaves	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook. F. & Thoms. (Menispermaceae) Tippateega ---- The leaves are eaten to control diabetes. Decoction of stem is useful in fevers.
49.	<i>Tylophora indica</i> (Burm.f) Merrill	Asclepiadaceae	Meka meyani-aku	Leaves	<i>Tylophora indica</i> (Burm.f) Merrill (Asclepiadaceae) Leaves are eaten, one on first day and increasing by one each day, for seven days in the morning on empty stomach. It provides immunity to many diseases.
50.	<i>Vitex negundo</i> Linn.	Verbenaceae	Vavili	Leaves	<i>Vitex negundo</i> Linn. (Verbenaceae) Vavilli: <i>Tylophora indica</i> (Burm.f.) Merrilli (Asclepiadaceae) Mekameyani-aku; <i>Diospyros chloroxylon</i> Roxb. (Ebanaceae) Ilintha: <i>Cassia fistula</i> Lin. (Caesalpininaceae) Rela: <i>Enocostema axillare</i> Raynal. (Gentianaceae) Resika: <i>Maytenus emarginata</i> (Willd.) Ding. Hou. (Celastraceae) Danti ---- The dried young leaves of above plants along with homemade ingredients (+) and suger are mixed and poedered. Small round globules of 1-2 gm are made and taken one each day for 9days as an effective remeady in diabetes., piles, body pains and arthritis. Food: only rotis made of jower (seeds of sorghum vulgare Pers.) with red chilly powder are eaten during the treatment.
51.	<i>Wrightia tinctoria</i> R.Br.	Apocynaceae	Palakodise	Seeds	<i>Wrightia tinctoria</i> R.Br. (Apocynaceae) Seeds are soaked in goat milk, ground and given for 3-4 days for vitality and vigour. Dried leaves are powdered and used as tooth powder for strength and prevention of diseases of gums.

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## Research Article

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# Traditional botanical knowledge of local people of Anantagiri and Dhamagundam forest area, Vikarabad district Telangana state

*P Sureshbabu and N Ramakrishna*

## Abstract

The present study deals with the documentation and evaluation of medicinal plants used by the tribal people in the primary health care in and around Anantagiri and Dhamagundam forest area, Vikarabad district. About 40 villages have been chosen for the study and yielded a valuable knowledge of plant medicine of the locals. The resource persons are mostly lambadas, chenchus and some elderly people of local villages. The study started in the month of May, 2012 and went on up to May, 2014. It revealed valuable information about the ethno medicine of the local tribals of this Dist. About 137 plant species of 36 families have been documented in this study and an itinerary is prepared according to alphabetical order of the diseases, families along with the vernacular names, botanical; names, drug formulation of drug formulation and methods of drug administration as told by the herbal practitioners. The present study is thus aimed at to understand i) To record the traditional medicinal practices of the Tribal communities of Vikarabad district. ii) The plants which are in use for curing the diseases them. Further, a detailed data regarding the efficacy of the drug and the curing efficiency level of the plant drugs used by the local as well as tribal communities of the district.

**Keywords:** medicinal plants, traditional botanical knowledge, tribals, disorder.

## INTRODUCTION

Documentation of Ethno botanical studies of any area has attained importance due to fast depletion of folklore knowledge and their uses because of modern life styles. The present use of modern medicine is increasing the vulnerability of human beings to various illnesses of unknown nature. The dominant allopathic systems of Medicine though providing treatment to many diseases also cause deleterious side effects on human body. All these factors are forcing the man to look for alternative sources more particularly from the plant origin. The usefulness and efficacy of the plants as curative agents of many human diseases is long known. Traditionally, the knowledge of plants as source of medicines for different diseases is well known through traditional medicinal systems of Ayurveda, Siddha, Unani, Homeopathy, Chinese's and Tibetan medicine. The vast tracts of Indian sub-continent and its rich flora and fauna are still to be explored. The people living in the forests and its vicinity and tribals are using many plants for several health problems. These people living away from the modern society, due to lack of proper health care, still depend on the folk lore medical practices for the primary health care. The ethno botanical survey of the area under study includes Vikarabad, Dharur and their surroundings of Vikarabad Dist. It is located on the central part of the Deccan plateau and lies in between 17° 20' and 18° 20' of North latitudes and 77° 54' and 79° 34' of East longitudes at Mean sea level 625.67mts. The forest cover is classified as a Southern Tropical Dry Deciduous type. Categorized, under group 5A/C-3 type of forest. The forest is of inferior type because of less rainfall, poor soil conditions and ever increasing biotic influence. The climate of the area is characterized by a hot summer of long duration and generally a dry weather, except during South-West monsoon season. The average annual rainfall is about 90mm, the bulk of which is received through the South West monsoon during June to September. The types of soils are predominantly black and red. The mandals under the study are partly covered by the forest area with interspersed human habitations, small villages and tribal thandas. Pullaiah studied about the flora in rangareddy district, Pullaiah T & Silar Moammed. M., 1999. *Flora of Vikarabad district*, (Regency Publications, New Delhi) [4]. They use many plants for various ailments as well as food, fibers and other uses. Many of these plants are endemic and not known to outer world. Ramachandra Reddy. P and Padma Rao. P., 2002. Survey of Plant crude drugs in folklore from Rangareddy district, Andhra Pradesh, India. Indian Journal of Traditional Knowledge,

Vol.1 (1), pp 20-25 [6]. The knowledge of plants using as medicines gained by the people through generation is being lost through passing generations. Due to lack of education, prevailing myths and misconceptions this knowledge could gradually lost under the pressure of human activities. Once we loose them it will be a permanent loss for us. Keeping in view of the above factors the present study has been under taken in the mandals of Vikarabad, Dharur and their surrounding areas. The information gained in this study will definitely be useful in preparing medicines and extracting active principle substances form the plants to help cure many ailments with better therapeutic value. Padma Rao & Ramachandra Reddy. P., 2000. Ethnomedical survey on plant drugs for cattle from Vikarabad district Andhra Pradesh, *J Swamy Bot Club*, 17-39 [5]. The study of chemical properties of the plant extracts and their efficacy evaluation scientifically will be useful in providing better Medicare for the rural people.

## METHODOLOGY

The present study includes the survey of nearly 40 villages in Vikarabad, Dharur mandals and their surroundings of Vikarabad Dist, during the last two year (May 2001 – May 2006). Several villages of the target area have been visited to find out resource persons, herbal practitioners and village heads. Resource persons with great known how pertaining to folklore practices were identified after conducting 2-3 trips to the villages. However a few villages were identified with the people having potential knowledge in use of medicinal plants for different ailments.

After establishing a better rapport with the villagers, herbal practitioners' information was gathered and documented. Although with best efforts to retrieve the information about the plants, their products used as curative agents by the herbal practitioners, only limited information could be collected. In certain of the cases local practitioners were reluctant to reveal the information due to myths and misconceptions. But the people who gave the information and helped us in this project were very open minded. Once they listened to our aims and objectives of the documentation, got realized and came forward openly to give their knowledge to be documented. Regular field trips were conducted to the villages of Vikarabad, Dharur, and other surrounding mandal villages. In interested cases, one or two long distance villages have also been covered to get the information during all seasons. The Ethno botanical data were collected and recorded following the standard procedures (Jain S.K, 1995.) by interacting with as many as 40 herbal practitioners and elders of the villages. Plant specimens were collected during the survey in different seasons and prepared herbarium specimens and identified with the help of floras. It is deposited with the Botany department SAP College, Vikarabad. The plant specimens collected were identified and cross checked with the Herbarium of Department of Botany, PG College of science, Saifabad, Osmania University. In this study the local (vernacular) name of plants being used, preparation of the drugs, methods of administration and precautions regarding food and avoidances and other practices were systematically recorded and documented. For identification and cross checking frequent visits were made to the Botany department Herbarium, P.G. College of Science Saifabad, Osmania University, Hyderabad.



Figure 1: Ananthagiri Reserve forest area, Ananthagiri Hills, Vikarabad Dist



Figure 2: Dhamandami Reserve Forest Area, Vikarabad Dist.

## ENUMARATION

1. *Acacia farnesiana* (L.) Willd.(Mimosaceae) Telugu: Kasturi tumma, Muriki tumma  
**Mad dog bite (Verri kukka katu):** 10 ml stem bark juice is given internally twice daily for three days
2. *Acacia nilotica* (L.) Del. (Mimosaceae) Telugu: Nalla tumma  
**Toothache:** Clean teeth with stem bark ash daily till cured.  
**Burns and Wounds:** Apply stem bark ash by mixing coconut oil till cured.
3. *Acalypha indica* L. (Euphorbiaceae) Telugu: Muripindi, Kuppinta  
**Ring worm:** Collect fresh leaf juice and add turmeric powder and salt in to it. Apply externally once a day till cured
4. *Acanthospermum hispidum* DC. (Asteraceae) Telugu: Kanigera alam, Guntakalagaraku  
**Cuts and wound s:** Leaves paste is applied on the affected part of the body once a day for 3-4 days.  
**Wounds:** Make fine paste with leaves by adding tea spoonful of curcuma powder. Apply this paste externally on affected part once daily till cured.
5. *Achyranthes aspera* L. (Amaranthaceae) Telugu: Uthareni, Chitikaalu,  
**Burns:** Apply leaf extract as a lotion for 2-3 days  
**Toothache:** 2 ml Leaves juice and dilute 1 g rock salt into it. Pour 2- 3 drops in to the ear. If the tooth pain is on right side pour drops in the left ear and vice versa.
6. *Aegle marmelos* (L.) Corr. (Rutaceae) Telugu: Bilvamu, Maredu,  
**Arthritis:** Make paste with leaves and mix equal quantity of sesame oil. Apply this paste externally on the affected part once a day till cured.  
**Dysentery:** 10 g of semi burnt fruit pulp is given twice a day for 2-3 days.
7. *Aerva lanata* (L) R.Br. (Amaranthaceae) Telugu: Pindikura  
**Abdominal pain:** 10 ml root decoction is given internally once in the early morning for 3 days
8. *Agave Americana* Linn. (Agavaceae) Telugu: Sakari matta  
**Ulcers:** 50 g leaf pulp is given with 1 g sugar for 30 days to cure ulcer completely.
9. *Ageratum conyzoides* L.(Asteraceae) Telugu: Ganagaju, Sahadevi  
**Burns:** Apply fresh leaf juice on the affected part.  
**Urinary infection:** 10 ml of leaf extract is given orally twice daily for three days
10. *Ailanthus excelsa* Roxb. (Simaroubaceae) Telugu: Pedda manu Peethiri manu  
**Leucorrhoea:** Make stem bark juice by adding 5g of *Piper longum* and 5g of *Cuminum cyminum*. 10ml juice is given thrice a day for one day.



11. *Alangium salvifolium* (L.f.) Wang (Alangiaceae) Telugu: Uduga,  
**Arthritis:** Grind together handful stem bark with five fruits of black pepper and wrap it in cotton cloth to dip in 250 ml of hot water for fifteen minutes. 100 ml of this solution is given internally for one time, repeat it after a week if necessary  
**Stomach pains:** Make leaf juice and add double quantity of cow ghee to the juice. Given this medicine orally once daily for three days
12. *Albizia amara* (Roxb.) Boivin (Fabaceae) Telugu: Narlingi  
**Fever:** 5 g each of stem barks of *Albizia amara*, *Azadirachta indica*, *Zizyphus oenoplia*, *Capparis zeylanica*, *Ricinus communis*, and *Cassia fistula* are pounded together to make powder and mix one tea spoonful of powder made into decoction in 100 ml of water and filtered. The decoction thus prepared is given internally twice a day for two days.
13. *Albizia lebeck* (Linn.) Willd. (Mimosaceae) Telugu: Dirisena, Pedda dirisenam  
**Scabies:** Grind 50g stem bark with 2 fruits of *Piper nigrum* and mix it into one glass (200ml) of water. 100 ml of this medicine is given internally thrice a day for one day.
14. *Allium cepa* L.(Liliaceae) Telugu: Ulligadda, Erragadda  
**Immunity:** Cut fresh onions and eat them as salad during lunch and dinner.
15. *Allium sativum* L.(Liliaceae) Telugu: Thella gadda  
**Swellings:** Bulb paste is applied on the affected part once day till cured.
16. *Aloe vera* (L.) Burm.f. (Liliaceae) Telugu: Kalabanda  
**Red discharge in woman:** Given 100 g leaf pulp with sugar once a day till cured.  
**Burning sensation while urination:** Given 50 g leaf pulp with 10 g glucose for 3 days.
17. *Alternanthera sessilis* (L.)DC (Amaranthaceae) Telugu: Ponnagantikura  
**Night blindness:** Make curry with leaves and given once a week.
18. *Alysicarpus monolifer* (L.) DC.(Fabaceae) Telugu: Amera  
**Wounds:** Apply leaf juice on wounds twice daily for three days.
19. *Amaranthus spinosus* L (Amaranthaceae) Telugu: Nalladoggata  
**Cuts and burns:** Apply fresh leaf juice on affected part. (P.Gopya, Chinagotti mukkala)
20. *Amaranthus tricolor* L.(Amaranthaceae) Telugu: Chirraku, Mulla thotakura  
**Scabies:** Root paste is applied (mix 0.5 g of sulphur for 100 g paste) externally once daily till cured.
21. *Andrographis paniculata* (Burm.f.)Wall. ex Nees ( Acanthaceae)  
**Controlling high BP:** Grind whole plant with 10 fruits each of *Piper longum*, and *Piper nigrum* and make 5 g of sized pills. One pill is given orally until comes to the normal.  
**Stomach pain:** One tea spoonful of powder is given internally through cow milk for one time. **Fever:** This plant is decocted with 3 fruits of black pepper. 10ml decoction is given internally thrice daily until cured.
22. *Annona squamosa* L. (Annonaceae) Telugu: Seethaphal  
**Arthritis:** Leaves paste is applied externally on affected part once daily till cured.
23. *Anthocephalus cadamba* (Roxb) Miq.Telugu: Rudraganam, Rudraganapa, Kadamba,  
**Dysentery:** 10 ml of stem bark juice is given with one glass of water once daily for three days.
24. *Argemone mexicana* L. (Papaveraceae) Telugu: Ulli vinjara, Yerrickusuma  
**Swellings:** Milk sap is applied externally on the affected part twice daily for 2-3days  
**Skin allergy:** Milk sap is applied externally on affected part once daily for 3-4 days.
25. *Argyrea nervosa* (Burm.f.) Bojer., Telugu: Samudrapala  
**Skin allergy:** Apply leaves paste on affected part once daily till cured.
26. *Aristolochia bracteolata* Lam (Aristolochiaceae) Telugu: Gadida gadapaku,  
**Stomach pain:** Grind 3 fresh leaves with 3 fruits of *Piper nigrum* and mix this into 20 ml water. 20 ml juice is given orally for one time only.
27. *Aristolochia indica* L.(Aristolochiaceae) Telugu: Nalla eswari  
**Skin infection:** 10 ml of root decoction is given internally once daily in the morning for a week.
28. *Asparagus racemosus* Willd. (Liliaceae) Telugu: Satavari, Callagadda, Pillipechara, Sithammavarijada, Chandamama gaddalu.  
**Mouth ulcers:** Make root powder along with seeds of *Abutilon indicum*. One tea spoon is given in morning with sugar.  
**Enhance breast milk:** The root powder is given to the mothers internally along with water or milk once a day for two weeks.
29. *Azadirachta indica* A. Juss. (Meliaceae) Telugu: Vepa  
**Fever:** 50 g stem barks of each of *Azadirachta indica*, *Zizyphus oenoplia*, *Capparis zeylanica*, *Ricinus communis*, *Cassia fistula* and *Albizia amara* boil in 1 liter of water for 15 minutes. 5 ml of decoction is given internally twice daily for 3- 4 days.
30. *Balanites aegyptiaca* (L.) Del. (Balanitaceae) Telugu: Gara chettu  
**Fever:** Crushed fruit is given internally through water once daily for three days  
**Immunity:** Leaf chutney is prepared and eaten once in week by locals during first rains (as on set of monsoon) to enhance immunity in their body to fight with the water borne disease.  
**Joint pains:** The pulp of dried fruit is used to cure joint pains in old people.
31. *Barleria prionitis* L. (Acanthaceae) Telugu: Mulla gorinta, Gattugolimiti  
**Toothache:** Chew the fresh stem piece for 5 min daily for 2 days.  
**Arthritis:** Roust fresh leaves and put them on affected part when they are slightly warm once daily till cured.
32. *Basella alba* L.(Basellaceae) Telugu: Bachali kura  
**Anemia:** Make chutney with leaves of *Basella alba*, *Moringa oleifera*. Eat this chutney twice a week for 3 weeks to enhance their hemoglobin percentage
33. *Bauhinia racemosa* Lamk. (Caesalpiniaceae) Telugu: Are, Aare chettu,  
**Arthritis:** Make decoction with stem barks of *Bauhinia racemosa*, *Semecarpus anacardium* and 30 ml is given internally once a day for two days.
34. *Biophytum sensitivum* (L.)DC.(Oxalidaceae) Telugu: Muduchu thamara  
**Cut and wounds:** leaf paste is applied externally once daily till cured.  
**Gonorrhoea:** 10 ml of root decoction is given internally once daily in the morning for 4 weeks.
35. *Boerhaavia diffusa* L., (Nyctaginaceae) Telugu: Atikamamidi  
**Anemia:** 10ml leaf juice is given through honey daily once for 15 days.

- Diarrhoea:** Make decoction with leaves and take 10ml orally twice daily till cured.
36. *Boswellia serrata* Roxb. (Burseraceae) Telugu: Andugu  
**Arthritis:** One tea spoon full of gum powder is given through a glass of goat milk daily once till cured.
37. *Brassica juncea* (L.) Czern.(Brassicaceae) Telugu: Avalu  
**Fever:** Apply seed oil on whole body mainly on chest part to control high fever particularly to the children.  
**Skin infection:** Semi roast the seeds and make a powder. Apply this powder along with coconut oil externally once a day for 4-5 days. (Elcha Pentaiah, Nastipur).
38. *Bridelia montana* Willd. (Euphorbiaceae) Telugu: Panchothkam  
**Dysentery:** One tea spoonful of stem bark powder is given internally along with one glass of warm water twice daily for 3 days
39. *Bridelia retusa* (L.) Spreng.(Euphorbiaceae) Telugu: Mulumaddi  
**Arthritis:** 50 g crushed stem bark is decocted in 100 ml sesame oil for 15 minutes and it is applied externally on affected part of the body once daily till cured.
40. *Bryonopsis laciniosa* (L.) Naud (Cucurbitaceae) Telugu: Ningi donda  
**Stomach pain:** Ground 10 g seeds along with 5 g of black pepper to make powder. 10 g of powder is given internally as single dose.  
**Arthritis:** Leaves are decocted with sesame oil and applied topically twice daily for 15 days.
41. *Buchanania lanzan* Spreng (Anacardiaceae) Telugu: Morri, Morlichettu  
**Infertility:** 15 g seed powder is given with goat or cow milk internally during bed time after fifth day of menstruation
42. *Butea monosperma* (Lamk.) Taub. (Fabaceae) Telugu: Mothuga, Moduga  
**Fever:** Make powder by the dry flowers of *Butea monosperma*, *Trachyspermum ammi*, *Cuminum cyminum*, *Piper nigrum*, *Zingiber officinalis*. Table spoon powder is given orally daily in the morning and evening till cured.  
**Intestinal worms:** 50 ml flower decoction is given orally for one time.  
**Infertility:** 50 ml of stem bark extract is given internally for three days to check conception.
43. *Caesalpinia bonduc* (L.) Roxb. (Caesalpiniaceae) Telugu: Gacha  
**Intestinal worms:** 5 g of seed pulp powder is mixed into one glass of water and given, twice daily till cured.
44. *Calotropis gigantea* (L.) R.Br. (Asclepiadaceae) Telugu: Jilledu, Nalla jilledu.  
**Arthritis:** Milk sap is applied externally on the affected part twice daily for three days.  
**Scorpion sting:** Milk sap is mixed into equal quantity of mango resin and applied externally at the place of sting for two times a day.  
**Burning sole:** Heat leaves on fire and put them on the ground and ask patient to step on these leaves for 15 minutes. Apply Sesame oil to sole before stand on leaves.
45. *Canavalia virosa* (Roxb.) Wt.&Arn. (Fabaceae) Telugu: Thamma kaya.  
**Ring worm:** Leaves extract is applied on the affected part once daily for three days.
46. *Canthium parviflorum* Lam.(Rubiaceae) Telugu: China balusu  
**Intestinal worms in children:** 3 ml of root extract is given internally once in the morning as a sing dose.
47. *Capparis zeylanica* L. (Capparidaceae) Telugu: Adonda  
**Stomach pain:** 10 ml of stem bark extract is given orally twice daily till cured.
- Fever:** Collect 5 g stem barks each of *Capparis zeylanica*, *Azadirachta indica*, *Zizyphus oenoplia*, *Ricinus communis*, *Cassia fistula*, *Albizia amara* to make decoction in one liter of water. 20 ml of this decoction is given internally twice a day for two days.  
**Diabetics:** Ripe fruits are eaten twice in a day to control sugar level.
48. *Capsicum annuum* L. (Solanaceae) Telugu: Mirapa, Mirpakaya  
**BP control:** It regulate blood pressure to normal in low blood pressure patients (many rural folks)
49. *Cardiospermum halicacabum* L.(Sapindaceae) Telugu: Buddakaakara teega, Patapata  
**Wounds:** Grind 50 g leaves along with 5 g *Cuminum cyminum* to make paste and it is applied externally on affected part once a day for three days.  
**Arthritis:** 50 g leaves are decocted in 100 ml sesame oil and applied on affected part once daily till cured.
50. *Careya arborea* Roxb. (Barringtoniaceae) Telugu: Dudippa  
**Stomach pain:** 10 ml of stem bark extract is given internally twice daily for 2 days to cure stomach pain due to intestinal worms or indigestion.  
**Fever:** 10ml of leaf and stem bark decoction is given internally twice daily for 2 days.
51. *Carica papaya* L. (Caricaceae) Telugu: Bappayi  
**Scabies:** Apply latex on the affected part once daily till cured. (Many women in the district)
52. *Carum copticum* Benth.&Hook. (Apiaceae) Telugu: Oma  
**Stomach pain:** Chew 5g of *Carum copticum* for two times.  
**Fever:** Ground 5 g each of *Carum copticum*, *Cuminum cyminum*, *Piper nigrum* and *Zingiber officinalis* to make juice and 2 tea spoons are given daily in the morning and evening for two days.
53. *Cassia auriculata* L. (Caesalpiniaceae) Telugu: Tangedu, Nela thangedu, Bathukamma pulu  
**Diabetic:** 20 g of matured stem powder is given along with one glass of water once a day for a month.  
**Leucorrhoea:** Decoction of flowers (20 ml) is given internally to control white discharge during menstrual time in women. (Many rural women)
54. *Cassia fistula* L. (Caesalpiniaceae) Telugu: Rela  
**Arthritis:** Apply paste with made up of leaves externally during bedtime for 3-4 days.  
**Stomach pain:** Fruits pulp is eaten once to reduce pain.  
**Fever:** Collect 5g each stem barks of *Cassia fistula*, *Capparis zeylanica*, *Albizia amara*, *Azadirachta indica*, *Zizyphus oenoplia* and *Ricinus communis*. Dry them and make powder mix one tea spoonful of powder into 1 glass of water and boil it for 10minutes. Administer this decoction orally twice a daily for two days  
**Throat infection:** Decoction of fruit pulp is used to gargle to control throat infection.
55. *Cassia occidentalis* L. (Caesalpiniaceae) Telugu: Kasantha,  
**Stomach pain:** 50 ml root extract is mixed into 1 g powder of *Carum copticum* and it is given orally once daily till cured.
56. *Cassia tora* L. (Caesalpiniaceae) Telugu: Tagarisa, Thydanta  
**Wounds:** Leaf paste is applied locally once daily for 3-4 days.
57. *Ceiba pentandra* (Linn) Gaertn.(Malvaceae) Telugu: Tella buruga  
**Impotency:** 10 ml of stem bark juice is given with goat milk every day during bed time for a period of month.
58. *Celastrus paniculatus* Willd. (Celastraceae) Telugu: Jyothismathi  
**Arthritis:** 10 g seeds are crushed and boil it in 100 ml of sesame oil for 15 minutes and it is applied externally on the affected part once daily during bed time till cured.

59. *Celosia argentea* L. (Amaranthaceae) Telugu: Gunugu, Bathukamma puvvu  
**Scabies:** Leaf paste is applied locally twice daily till cured.  
**Night blindness:** Make chutney with fresh leaves and eaten twice in a week for two months.
60. *Centella asiatica* (Linn.) Urban.(Apiaceae) Telugu: Saraswati aku  
**Sun allergy:** Applied leaf juice externally on the affected part once daily for two days.  
**Jaundice:** 20 ml of leaf juice is given internally early in the morning once a day for 4-5 days.
61. *Cicer arietinum* L. (Fabaceae) Telugu: Senagalu, Chanagalu  
**Immunity:** Sprouts are fried them with ghee and given to the patients along with roti thrice a week for a month.
62. *Cissus vitiginea* L. (Vitaceae) Telugu: Kudidine, Golla diddi, Kurdandi, Diddi aku  
**Wounds:** Apply stem bark paste externally on affected part once daily till cured.
63. *Cissus quadrangularis* Linn. (Vitaceae) Telugu: Nalleda, Nalleru, Nallakada  
**Cold and Cough:** 10 ml tender shoots extract is given orally as a single dose.  
**Bone fracture:** Ground the fresh stem and mix with ghee and it is given orally a week to quick recover from fractured patient.
64. *Citrullus colocynthis* (L.) Schrad. (Cucurbitaceae) Telugu: Eetiputcha, Paparabundama, Verri pucha kaya  
**Jaundice:** 5 g of root powder is mixed into 100 ml cow milk and it is given internally once a week for 3 weeks. Avoid eating chicken, mutton and fish etc.
65. *Citrus aurantifolia* (Christm. & Panz.) Swingle (Rutaceae) Telugu: Nimma  
**Dandruff:** 5 ml fruit juice is mixed into 20 g curd and it is applied externally twice a week for a month.  
**Vomiting:** Inhales the smell of ripen fruit.
66. *Cleistanthus collinus* (Roxb.) Bth. ex Hook. f. (Euphorbiaceae) Telugu: Billa godisa,  
**Fungus in fingers:** Leaves paste is applied externally by adding little turmeric powder once daily for three days.
67. *Cleome gynandra* Linn. (Capparidaceae) Telugu: Thalati, Vamiti  
**Ear ache:** Pour 2 -3 drop of leaf extract into the affected ear once daily for 2 days.
68. *Cleome viscosa* Linn. (Capparidaceae) Telugu: Thalati, Vaviti  
**Headache:** Crushed leaves (which have removed juice) should be placed on head and tie with cloth for an hour, repeat it after 4 hours if necessary (Illutla China Pentaiah, Kagajmadduru)
69. *Clerodendrum multiflorum* (Burm. f.) O. Ktze. (Verbenaceae) Telugu: Thakkali chettu  
**Stomach pain:** Grind handful leaves along with 5g of *Trachyspermum ammi* to make pills, 10g size pill is given internally twice a day for one day.  
**Arthritis:** Leaf paste is applied externally on the affected part once a day for two days.(Cheviti Ramulu, Madduru)
70. *Clerodendrum serratum* (Linn.) Moon (Verbenaceae) Telugu: Gantubharangi  
**Fever:** Make decoction with 50 g roots along with 20 g of *Andrographis paniculata*, and 3 black pepper. 20ml decoction is given internally twice daily for 3 days.
71. *Clitoria ternatea* Linn. (Fabaceae) Telugu: Shankhapushpi  
**Psoriasis:** Make root paste and applied along with leaf pulp of *Aloe vera* externally once daily for 3-4 weeks.
72. *Coccinia grandis* (L.) Voigt (Cucurbitaceae) Telugu: Kakidonda, Kodikada, Adavi donda  
**Diabetics:** 10 ml fruit juice is given internally once a week.
73. *Cocculus hirsutus* (L.) Diels (Menispermaceae) Telugu: Dusudu teega, Dusara teega, Telladusura  
**Venereal disease:** 20 ml leaf juice is given orally once a day for a month.  
**Leucorrhea:** Leaf juice is given by adding sugar internally once daily for 15 days.  
**Red discharge:** Grind handful leaves along with 10g of crystalline suger (misri) and it is given internally once a day for 15 days.
74. *Cochlospermum religiosum* (Linn.) Alston (Cochlospermaceae) Telugu: Konda gogu  
**Cough:** Make powder with stem barks of *Cochlospermum religiosum* and *Terminalia chebula*. Mix 2g powder into 100ml hot water. 100ml medicine is given internally once in the early morning for a week.
75. *Cocos nucifera* L. (Arecaceae) Telugu: Kobbari, Tenkai  
**Dehydration:** 500 ml of coconut water given twice daily for 2-3 days along with salt water.
76. *Cordia dichotoma* Forst. f. (Boraginaceae) Telugu: Chinna-nakkeru, Banka nakkeru, Iriki  
**Diarrhoea:** Semi burnt fruits are given internally for three times a day.
77. *Coriandrum sativum* L. (Apiaceae) Telugu: Dhaniyalu, Kothmeera  
**Stomach pain:** Make chutney with leaves and eaten twice a day for easy digestion.
78. *Croton bonplandianum* Baill. (Euphorbiaceae) Telugu: Galivana alam  
**Sprains and Swellings:** Apply milk sap on the affected part once daily for 3-4 days.
79. *Cryptolepis buchananii* Roem.&Schult. (Asclepiadaceae) Telugu: Adavi pala teega  
**Arthritis:** Make chutney with leaves of *Cryptolepis buchananii* and *Cissus quadrangularis* and given to eat like chutney twice a week for 3-4 weeks.
80. *Cuminum cyminum* L. (Apiaceae) Telugu: Jeelakarra / Jeera  
**Fever:** Grind 5g each of *Cuminum cyminum*, *Carum copticum*, *Piper nigrum* and *Zingiber officinalis* altogether to make juice. Two tea spoons are given daily in the morning and evening for two days.
81. *Curculigo orchioides* Gaertn. (Hypoxidaceae) Telugu: Nela thadi  
**Impotency:** 5 g roots powder is given internally along with 100ml goat milk once daily during bed time for 15 days.
82. *Curcuma longa* L. (Zingiberaceae) Telugu: Pasupu  
**Cold:** Rhizome paste is applied on the top of the head of childred through mixing castor oil twice a day for 3 days.  
**Cuts and wounds:** Rhizome paste is applied immediately on the place of cut to control bleeding.
83. *Cymbopogon martini* (Roxb.) Wets. (Poaceae) Telugu: Nimma gaddi, Kashy gaddi  
**Lice on head:** Grind the leaves of *Cymbopogon martini* and *Annona squamosa* together to make paste and it is applied to the hair once daily for 2-3 days.
84. *Dalbergia paniculata* Roxb. (Fabaceae) Telugu: Pachari, Pacharugu  
**Hair fall and dundraf:** Stem bark paste is applied to the hair once in a week to control hair fall due to dundraf.
85. *Datura metel* L. (Solanaceae) Telugu: Ummetha, Nalla ummetha  
**Arthritis:** Leaves paste is applied on the affected part once a day for 2 days

86. *Desmodium gangeticum* (L.) DC. (Fabaceae) Telugu: Deyyam jada  
**Fever:** Decocted 50g fresh roots along with 3 pepper in 200ml of water and 10ml of this decoction is given internally twice daily for 3- 4 days.
87. *Dioscorea bulbifera* L. (Dioscoreaceae) Telugu: Nela dumpa  
**Tumors:** Tuber paste is applied externally once daily for 3-4 days.
88. *Dioscorea pentaphylla* L. (Dioscoreaceae) Telugu: Genusugaddalu  
**Indigestion:** 20ml tuber juice is given internally twice daily for 2 days.
89. *Dodonaea angustifolia* L.f., Suppal (Sapindaceae)  
**Sprains:** Roused fresh tender leaves are placed on the affected part of the body once daily for 3-4 days.
90. *Dolichos lablab* L. (Fabaceae) Telugu: Chikkudu  
**Ringworm:** Fresh leaf juice is applied externally on the affected part once daily for 3-4 days.
91. *Eclipta prostrata* (L.) L. (Asteraceae) Telugu: Gunta galijeru, Gunta kalagaraaku  
**Stress relief:** Leaf paste is applied to the hair for one time only.  
**Anaemia:** Make chutney with leaves and eaten along with rice once a week for 3-4 weeks  
**Hair fall and white hair:** leaf paste is applied once a week to control white hair and hair fall.
92. *Eleusine coracana* (L.) Gaertn (Poaceae) Telugu: Thydalu, Ragulu  
**Tooth pain in children:** 100ml of grain flour is given internally daily for a month.
93. *Emblica officinalis* Gaertn. (Euphorbiaceae) Telugu: Usiri  
**Indigestion:** 5g fruit powder is given internally after food for 2-3 times a day.  
**Burning sensation while urination:** 10g fruit powder is given with sugar internally morning and night until cured.
94. *Enicostemma axillare* (Lam.) Raynal (Gentianaceae) Telugu: Resika  
**Stomach pain:** 5ml plant extract is given along with 2 g of black pepper powder internally as a single dose.
95. *Euphorbia hirta* L. (Euphorbiaceae) Telugu: Palalam, Pacha botla  
**Conjunctivitis:** One or two drop of milk sap is applied on the affected eye once a day for three days.  
**Menstrual pains:** 20ml leaf juice is given internally once daily during menstrual period.  
**Scabies:** Leaf juice is applied by mixing 1g of sulphur externally on the affected part of the body once daily 3-4 days.
96. *Euphorbia tirucalli* L. (Euphorbiaceae) Telugu: Piddakajameda, Manchi jemudu  
**Piles:** Milk sap is mixed with turmeric powder and applied on the affected part once a day for a week to complete cure of pile in children.
97. *Feronia elephantum* Correa. (Rutaceae) Telugu: Velaga, Velama  
**Diarrhoea:** Young fruit pulp is given internally for one time only.
98. *Ficus bengalensis* L. (Moraceae) Telugu: Marri  
**Impotency:** Handful of young leaf buds are shade dried and make powder and it is mixed into
99. *Ficus hispida* L. f. (Moraceae) Telugu: Brahma medi,  
**Mad dog bite (Verri kukka katu):** 20ml fruit juice is given internally once daily for two days.
100. *Ficus religiosa* L. (Moraceae) Telugu: Ravi chettu  
**Impotency:** 5g fruits powder is given along with cow milk daily once for a month.
- Skin diseases:** Stem bark paste is applied on the affected part once daily till cured.
101. *Gardenia gummifera* L. (Rubiaceae) Telugu: Chit-mit  
**Stomach pain:** 5ml of stem bark juice is given orally once to cure stomach pain.
102. *Gloriosa superba* L. (Liliaceae) Telugu: Venkayya puvvu, Nabhi pulu  
**Swellings:** Corm paste is applied externally on the affected part once a day for three days.
103. *Gmelina arborea* Roxb. (Verbenaceae) Telugu: Gummudu tekku, Pedda gummudu.  
**Back pain:** 10 ml root extract is given internally once a day for a week. (Elcha Pentaiaha, Nastipur)
104. *Gymnema sylvestre* (Retz.) R. Br. **Family:** Asclepiadaceae  
**Diabetic:** 10ml leaf decoction is given internally early in the morning for 30 days.
105. *Haldinia cordifolia* (Roxb.) Ridsdale (Rubiaceae) Telugu: Bandaru  
**Dysentery:** 20ml stem bark juice is given internally twice daily till cured
106. *Helicteres isora* L. (Sterculiaceae) Telugu: Nuli thada  
**Scabies:** Sun dry the fruits to make powder. Apply powder by mixing coconut oil externally on the affected part once daily till cured.
107. *Heliotropium indicum* Linn. (Boraginaceae) Telugu: Thelu kondi, Naga danthi  
**Scorpion sting:** Leaf juice is applied externally on the affected part once daily for 3 days.
108. *Hemidesmus indicus* (L.) Schult. (Periplocaceae) Telugu: Sugandi pala  
**Weakness:** One tea spoonful of power is mixed in a cup of tea and it is given to drink daily for a month.
109. *Hibiscus rosa-sinensis* L. (Malvaceae) Telugu: Mandara  
**Control Hair fall:** Fry handful petals and soak them in 100ml coconut oil and it is applied to the hair every day.  
**Dandruff:** Flowers are boiled in coconut oil for 15 minutes and cooled, apply this oil to the hair once daily to control dandruff.
110. *Holarrhena pubescens* (Buch.-Ham.) Wall. Ex G. Don (Apocyanaceae) Telugu: Nallapalagodisa  
**Cuts and wounds:** Milk sap is applied externally on the portion of the cut or wound to control bleeding and apply fresh turmeric paste in case of small cuts.
111. *Holoptelea integrifolia* (Roxb.) Planch. (Ulmaceae) Telugu: Nermalinara, Nermalichettu  
**Arthritis:** Make stem bark paste and boil with sesame oil for 30 min and apply externally when it is lukewarm once daily till cured.
112. *Holostemma ada-kodien* Schultes (Asclepiadaceae) Telugu: Adavi palateega  
**Sprains:** Applied latex externally on affected part, once daily till cured.  
**Wounds:** Applied leaf paste externally on wounds once daily till cured
113. *Jatropha curcas* L. (Euphorbiaceae) Telugu: Adavi-amudamu, Nepalam  
**Cuts:** Make leaf paste and applied externally on cuts to control bleeding.
114. *Jatropha gossypifolia* L. (Euphorbiaceae) Telugu: Chitti nepalam  
**Scabies:** Leaf paste is applied externally on the affected part once daily till cured. (Elcha Pentaiah, Nastipur)

115. *Justicia adathoda* L. (Acanthaceae) Telugu: Addasaram  
**Cough:** 100ml leaf decoction is given along with honey internally morning and evening to get relief from cough.
116. *Justicia procumbens* L. (Acanthaceae) Telugu: Papadaku  
**Arthritis:** 20 g of whole plant is ground and boil it in 100ml of coconut oil for five minutes and apply externally on the affected part till cured
117. *Lagerstroemia parviflora* Roxb. (Lythraceae) Teugu: Chennangi  
**Cracked sole:** Apply leaf paste on the affected part once in night before sleep till cured
118. *Lannea coromandelica* (Houtt.) Merr. (Anacardiaceae) Telugu: Gumphena  
**Dysentery:** 10ml stem bark juice is given internally once daily for 2-3 days
119. *Lantana camara* L. (Verbenaceae) Telugu: Murikimalle  
**Cuts and wounds:** Grind handful leaves with turmeri and it is applied externally twice daily 2-3 days.
120. *Lawsonia inermis* L. (Lythraceae) Telugu: Mydaku, Gorintaku  
**Arthritis:** Make paste out of stem bark and apply this paste externally once daily for two weeks.
121. *Leonotis nepetiifolia* (L.) R. Br. (Lamiaceae) Telugu: Rana bheri  
**Skin allergy:** Apply root paste on affected part once a day for three days.
122. *Leucas aspera* (Willd.) Link (Lamiaceae) Telugu: Thummi  
**Abdominal pain:** Whole plant is boiled into 500ml water for 5 minutes. 20ml of this filtered decoction is given for one time  
**Psoriasis:** Leaf juice is boiled in coconut oil and it is applied externally on the affected part once daily till cured.
123. *Tamarindus indica* L. (Caesalpiniaceae) Telugu: Chintha chettu  
**Cracked sole:** Fruit pulp is applied externally on affected part once daily till cured.
124. *Terminalia arjuna* (Roxb. ex D. C.) Wt. & Arn. (Combretaceae) Telugu: Etimaddi, Eru maddi, Tella maddi.  
**Anaemic:** 1 tea spoon powder is given with one glass of water or cow/goat milk for three months.  
**Cardiac tonic:** Stem bark extract is given daily to strengthening the hart functions as a cardiac tonic.
125. *Terminalia bellerica* (Gaertn)Roxb. (Combretaceae) Telugu: Thani, Thade, Tandra  
**Stomach pain:** One tea spoonful seed powder is given with sugar or honey thrice a day for two days.
126. *Terminalia chebula* Retz. (Combretaceae) Telugu: Karaka chettu,  
**Dry cough:** One tea spoonful fruit powder of *Terminalia chebula* is given twice daily for three days.
127. *Tribulus terrestris* L., (Zygophyllaceae) Telugu: Palleru  
**Impotency:** Ground 10gseeds with 10g dry roots of *Withania somnifera* to make powder. One tea spoonful powder is given internally daily with milk during bed time for 30 days.
128. *Tridax procumbens* L. (Compositae) Telugu: Gayamkura, Belapaku, Nalla alam  
**Fresh cuts:** Leaves paste is applied along with turmeric powder twice daily for 3-4 days.
129. *Trigonella foenum-graecum* L. (Fabaceae)  
**Diarrhoea:** 5g Seeds are chewed to cure diarrhoea twice daily for two days.
130. *Tylophora indica* (Burm.f.) Merrill (Asclepiadaceae) Telugu: Meka meyani teega  
**Venereal disease:** Ground 7 leaves along with 7 fruits of black pepper to make pill. 5 g size of pill is given orally once a day for 5 days.
131. *Vitex negundo* L. (Verbenaceae) Telugu: Vayilaku  
**Paralysis:** Ground 50g leaves along with 2g of Piper nigrum, one fruit of *Woodfordia fruticosa*, and 7leaves of Piper betle and make a bolus. 20 g bolus is given in the morning of every alternative day. Avoid eating fish during medication.  
**Arthritis:** Leaves paste is applied externally once daily till cured.
132. *Wattakaka volubilis* (L. f.) Stapf. (Asclepiadaceae) Telugu: Bandi gurija  
**Swellings:** Leaves are decocted with water and applied externally on the affected part when it is slightly warm.  
**Arthritis:** 50 ml leaves decoction is given orally once daily for 30 days.
133. *Withania somnifera* (L.) Dunal (Solanaceae) Telugu: Aswagandha, Panneru gadda, Dommadolu gadda  
**Impotency:** 20g root powder is given with one glass of cow milk before sleep at night daily for 30 days.  
**Back ache and muscular pains:** 10 g root powder is given with honey once daily for 15 days (Mallaiah, Saipet)  
**Fitness:** 10 g root powder is given with goat milk daily for two weeks (Cheeguri Ellaiah, Avancha)  
**Tumours:** Apply castor oil to the green leaves and heat them on fire and placed them on the affected part once daily for 3-4 days (Golla Pochaiiah, Thimmapur)  
**Obesity:** roots are fried with ghee and given to the patient for 30 days.
134. *Woodfordia fruticosa* (L.) Kurz (Lythraceae) Telugu: Jaji vayila, Jajuki  
**Gas trouble:** 10 ml of flower juice is given internally once daily for two days.  
**Paralysis:** Ground 1 fruit along with 50g leaves of *Vitex negundo*, 2g of Piper nigrum, and 7 leaves of Piper betle to make a bolus. 20 g bolus is given in the morning of every alternative day for a month. Fish meat is avoided during the course of treatment.
135. *Wrightia tinctoria* Br. (Apocynaceae) Telugu: Ankudu, Tellapala kodise  
**Psoriasis:** Leaves are decocted with coconut oil and applied externally once daily till cured.
136. *Zingiber officinalis* Rosc. (Zingiberaceae) Telugu: Allamu, Sonti (dried ginger)  
**Cough:** 5ml extract of fresh rhizome is given internally in the early morning for 3 days.  
**Sexually transmitted disease:** 1 g rhizome is decocted along with 2 g of Piper nigrum 10g root bark of *Plumbago zeylanica*, 1 seed of *Semecarpus anacardium* in half litre water. 20 ml decoction is given internally by adding tea spoonful of cow ghee once daily for 3 days.
137. *Zizyphus oenopia* (Linn.) Mil (Rhamnaceae) Telugu: Pariki  
**Fever:** Crush 5 g stem bark with equal quantity stem barks of *Albizia amara*, *Azadirachta indica*, *Capparis zeylanica*, *Ricinus communis*, and *Cassia fistula* and boiled in 100ml water for 15 minutes. 20 ml is given orally twice daily for two days.

## DISCUSSION

The present study deals with the documentation and evaluation of medicinal plants used by the tribal people in the primary health care in and around Vikarabad and Dharur mandals of Vikarabad district, T.S. About 40 villages have been chosen for the study and yielded a valuable knowledge of plant medicine of the locals. The herbal remedies mentioned are of certain general and specific ailments, such as snake bite, cough, and scorpion sting, head ache, back pain body pains, cold, dandruff, dog bite, fever, hair loss, jaundice, inflammation, joint pains, lice killer, skin ailments, ear pains, eye problems, red and white discharge

in women, loss of semen in urine in men, tooth ache and gum problems, stomach ache, bone fractures, conception and menstrual problems and wound healing. The resource persons are mostly lambadas, chenchus and some elderly people of local villages. The people practice and cure almost all ailments or diseases or wounds very effectively with simple locally available plants with out involving much financial commitment, in majority of the cases they treat freely. The study started in the month of May, 2012 and went on up to May, 2014. It revealed valuable information about the ethno medicine of the local tribals of this Dist. It is invaluable and having immense potential for the primary health care of the people in this area. About 137 plant species of 36 families have been documented in this study and an itinerary is prepared according to alphabetical order of the diseases, families along with the vernacular names, botanical names, drug formulation of drug formulation and methods of drug administration as told by the herbal practitioners. The Practitioners also felt that of late their practice is dwindling due to non availability of plants which were plenty till recently, due to loss of habitat and forest cover in this area. The method of herbal practice is also decreasing as the practitioners are not passing the knowledge to the next generations before their death and also due to lack of proper written documentation. They fell that proper documentation of the knowledge of herbal practitioners should be taken up immediately in all the areas of the Dist before it disappears and conservation of medicinal plants in the area is very much in need. The present study elicits the importance of local herbal practices and availability of medicinal plants in the area, which will help in self sufficiency for their primary health care practices. Though this is a small inventory which helped in identifying the gravity of the situation of loss of medicinal biodiversity of the area and subsequently non availability of the treatment by the herbal practitioners to the local poor people of the area, unless other wise the conservation and afforestation practices are taken. The present type of survey documentation must be continued involving many more villages and traditional practitioners so that we can have a concrete picture of the richness of the medicinal flora and as well as the availability of folklore medicinal treatment to the local people.

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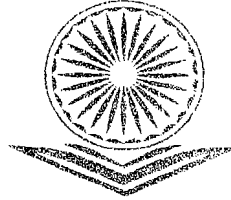
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## 5. Ethnomedicinal Knowledge of Anantagiri Forest Area, Vikarabad District Telangana

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### **Abstract**

The present study deals with the documentation and evaluation of medicinal plants used by the folklore people in the primary health care in and around Anantagiri forest area, Vikarabad District. The resource persons are mostly Golla, Kurma, Chenchus and some elderly people of local villages. It revealed valuable information about the ethno medicine of the local tribal of this Dist. The present study is thus aimed at to understand i) the potentiality of ethno-medicinal knowledge of the local tribal, ii) the plants which are in use for curing the diseases them. Further, a detailed data regarding the efficacy of the drug and the curing efficiency level of the plant drugs used by the local as well as tribal communities of the district.

**Keywords:** Ethno medicine, Folklore communities, Medicinal knowledge, Tribal

### **Introduction**

Documentation of Ethno botanical studies of any area has attained importance due to fast depletion of folklore knowledge and their uses because of modern life styles. The present use of modern medicine is increasing the vulnerability of human beings to various illnesses of unknown nature. The dominant allopathic systems of Medicine though providing treatment to many diseases also cause deleterious side effects on human body. All these factors are forcing the man to look for alternative sources more particularly from the plant origin. The usefulness and efficacy of the plants as curative agents of many human diseases is long known. Traditionally, the knowledge of plants as source of medicines for different diseases is well known through traditional medicinal systems of Ayurveda, Siddha, Unani, Homeopathy, Chinese's and Tibetan medicine. The vast tracts of Indian sub-continent and its rich flora and fauna are still to be explored. The people living in the forests and its vicinity and tribal are using many plants for several health problems. The ethno botanical survey of the area under study includes Vikarabad,



Dharur and their surroundings of Vikarabad Dist. The mandals under the study are partly covered by the forest area with interspersed human habitations, small villages and tribal thandas. They use many plants for various ailments as well as food, fibers and other uses. Many of these plants are endemic and not known to outer world. The knowledge of plants using as medicines gained by the people through generation is being lost through passing generations. Due to lack of education, prevailing myths and misconceptions this knowledge could gradually lost under the pressure of human activities. The information gained in this study will definitely be useful in preparing medicines and extracting active principle substances from the plants to help cure many ailments with better therapeutic value. The study of chemical properties of the plant extracts and their efficacy evaluation scientifically will be useful in providing better Medicare for the rural people.

Vikarabad was founded and is named after fifth Paigah Amir (premier noble) H.E. Nawab Sir Vikar-ul-Umrah Bahadur, Sikander Jung, Iqbal-ud-Daula and Iqtadar-ul-Mulk, Nawab Muhammed Fazaluddin Khan KCIE served as Prime minister of Hyderabad State and Berar Province between 1893 and 1901. This district central part of the Deccan plateau and lies in between  $17^{\circ} 20'$  and  $18^{\circ} 20'$  of North latitudes and  $77^{\circ} 54'$  and  $79^{\circ}$  of East longitudes at Mean sea level 625.67mts. The forest cover is classified as a Southern Tropical Dry Deciduous type. Categorized, under group 5 A/C-3 type of forest. The forest is of inferior type because of less rainfall, poor soil conditions and ever increasing biotic influence. The climate of the area is characterized by a hot summer of long duration and generally a dry weather, except during South-West monsoon season. The average annual rainfall is about 960mm, the bulk of which is received through the South West monsoon during June to September. The types of soils are predominantly black and red. The mandals under the study are partly covered by the forest area with interspersed human habitations, small villages and tribal thandas.

#### **Material and Methods**

The present study includes the survey of nearly all villages in surroundings of Vikarabad Dist, during the year (May 2003 – May 2006). Several villages of the target area have been visited to find out resource persons, herbal practitioners and village heads.

After establishing a better rapport with the villagers, herbal practitioners' information was gathered and documented.

**Observation Table**

Sr. No	Botanical Name	Family	Local Name	Uses
1	<i>Acacia nilotica (L.) Del.</i>	<i>Mimosaceae</i>	<i>Nallatamma</i>	Toothache, Burns and Wounds
2	<i>Achyranthes aspera L.</i>	Amaranthaceae	Uthareni, Chitikaalu	Burns, Toothache
3	<i>Aerva lanata (L) R.Br.</i>	Amaranthaceae	Pindikura	Abdominal pain
4	<i>Ailanthus excelsa Roxb.</i>	Simaroubaceae	Pedda manu Peethiri manu	Leucorrhoea
5	<i>Basella alba L</i>	<i>Basellaceae</i>	<i>Bachaliki kura</i>	Anemia
6	<i>Boswellia serrate Roxb</i>	Burseraceae	Andugu	Arthritis
7	<i>Buchanania lanzan Spreng</i>	Anacardiaceae	Morri, Morlichettu	Infertility
8	<i>Butea monosperma (Lamk.) Taub.</i>	Fabaceae	Mothuga, Moduga	Fever, Infertility, Intestinal worms
9	<i>Caesalpinia bonduc (L.) Roxb.</i>	Caesalpiniaceae	Gacha	Intestinal worms
10	<i>Canavalia virosa(Roxb.) Wt.&amp;Am.</i>	Fabaceae	Thammakaya.	Ring worm
11	<i>Celosia argentea L.</i>	Amaranthaceae	Gunugu, Bathukamma puvvu	Scabies, Night blindness
12	<i>Centella asiatica (Linn.) Urban</i>	Apiaceae	Saraswati aku	Sun allergy, Jaundice
13	<i>Bridelia montanaWilld.</i>	Euphorbiaceae	<i>Telugu</i> <i>Panchothkam</i>	Dysentery
14	<i>Canavalia virosa (Roxb.) Wt.&amp;Am.</i>	Fabaceae	Thamma kaya.	Ring worm
15	<i>Ceiba pentandra (Linn) Gaertn</i>	Malvaceae	Tella buruga	Impotency
16	<i>Cleistanthus collinus (Roxb.) Bth. ex Hook. f.</i>	Euphorbiaceae	Billa godisa	Fungus in fingers
17	<i>Desmodium gangeticum (L.)DC.</i>	Fabaceae	Deyyam jada	Fever
18	<i>Eclipta prostrata (L.)</i>	Asteraceae	Guntagalijeru, Guntakalagara	Stress relief, Anaemia, Hair fall and white hair

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19	<i>Ficus bengalensis</i> L.	Moraceae	Marri	Impotency
20	<i>Gloriosa superba</i> L.	Liliaceae	Venkayya puvvu, Nabhi pulu	Swellings
21	<i>Hemidesmus indicus</i> (L.) Schult.	Periplocaceae	Sugandi pala	Weakness
22	<i>Holoptelea integrifolia</i> (Roxb.) Planch	Ulmaceae	Nemalinara, Nemalichettu	Arthritis
23	<i>Justicia procumbens</i> L	<i>Acanthac cae</i>	<i>Papad aku</i>	Arthritis
24	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Thummi	Abdominal pain, Psoriasis
25	<i>Tribulus terrestris</i> L.,	<i>Zygophyl laceae</i>	<i>Paller u</i>	Impotency
26	<i>Wattakaka volubilis</i> (L. f.) Stapf.	Asclepiadaceae	Bandi gurija	Swellings, Arthritis
27	<i>Wrightia tinctoria</i> Br.	Apocynaceae	Ankudu, Tellapala kodise	Psoriasis
28	<i>Zizyphus oenoplia</i> (Linn.) Mil	Rhamnaceae	Pariki	Fever

### Result and Discussion

The present study deals with the documentation and evaluation of medicinal plants used by the tribal people in the primary health care in Vikarabad Dist, The people practice and cure almost all ailments or diseases or wounds very effectively with simple locally available plants without involving much financial commitment, in majority of the cases they treat freely. The study started in the month of May, 2003 and went on up to May, 2006. It revealed valuable information about the ethno medicine of the local tribal of this Dist. It is invaluable and having immense potential for the primary health care of the people in this area. The Practitioners also felt that of late their practice is dwindling due to non-availability of plants which were plenty till recently, due to loss of habitat and forest cover in this area. The method of herbal practice is also decreasing as the practitioners are not passing the knowledge to the next generations before their death and also due to lack of proper written documentation. They fell that proper documentation of the knowledge of herbal practitioners should be taken up immediately in all the

areas of the Dist before it disappears and conservation of medicinal plants in the area is very much in need. The present study elicits the importance of local herbal practices and availability of medicinal plants in the area, which will help in self-sufficiency for their primary health care practices. Though this is a small inventory which helped in identifying the gravity of the situation of loss of medicinal biodiversity of the area and subsequently non availability of the treatment by the herbal practitioners to the local poor people of the area, unless otherwise the conservation and afforestation practices are taken.

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# A STUDY OF SOME SACRED PLANTS IN ANANTHAGIRI RESERVE FOREST OF VIKARABAD DISTRICT, TELANGANA STATE

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**Abstract:** Sacred groves are the pockets of almost climax vegetation. Preserved on religious grounds. They are located in the remote tribal areas. There are many plants grown near the temples, which are regarded as the sacred plants by different ethnic groups of the country. Sacred groves are not only the sacred ecosystems functioning as a rich repository of nature's unique biodiversity, but also a product of the socio - ecological philosophy that our fore fathers have been cherishing since days. In India, from time immemorial, the concept of conservation of nature has been carefully woven in to the various religious beliefs and customs. Sacred groves are significant also in tracing the past history area they act as model for social forestry, as they help in finding out the species composition in particular geographical area. The groves replicate the situation of the natural forest to a considerable. Sacred groves are also the home of many medicinal plants which not only help in curing several diseases of the rural population but also keep alive the heritage of traditional system of Indian medicine. Tribal folklore is rich in Magico-religious beliefs and taboos. Sacred groves are ancient natural sanctuaries that have supported the growth of several interesting and rare species of flora and fauna of the past. In the district many centers are considered under sacred grove category.

**Keywords:** Sacred groves, local communities, Vikarabad district

## INTRODUCTION

Sacred groves are small groves that vary in size from a few hectares to a few kilometers protected by local communities as being the sacred residences of local deities and sites for religio - cultural rituals. There are about 14,000 sacred groves. In India various Gods and Goddesses are worshipped in Hindu religion throughout India, various plant parts like bark, twigs, leaves, flowers, fruits and seeds are offered to Gods. There are many plants grown near the temples, which are regarded as the sacred plants by different ethnic groups of the country. Sacred groves are not only the sacred ecosystems functioning as a rich repository of nature's unique biodiversity, but also a product of the socio - ecological philosophy that our fore fathers have been cherishing since days. In India, from time immemorial, the concept of conservation of nature has been carefully woven in to the various religious beliefs and customs. Tribal folklore is rich in Magico-religious beliefs and taboos. They believe that some Gods and deities reside in forests. The famous Indian botanist, J.D Varthk has museums of living giant trees, a treasure house of rare, endemic and endangered species, a dispensary of medicinal plants, and a garden for botanist, a gene bank for economically important organisms, a paradise for nature lovers and a lab for environmentalists. These sacred groves are commonly undisturbed from human interference due to religious beliefs. Sacred groves are assumed to be an abode of the forest God. Sacred groves may be termed as the natural islands of climax vegetation maintained and preserved for centuries in the name of God, a village deity or a forest spirit usually looked after by the local communities but seldom touched for any kind of its produce. Sacred groves are also the home of many medicinal plants which not only help in curing several diseases of the rural population but also keep alive the heritage of traditional system of Indian medicine. Very rare and economically important medicinal plants inhabit the groves Hindu people celebrate different festivals on various religious occasions throughout the year. In these ceremonies people use various plants and their parts to perform different rituals and rites. The plants, which are used in religious ceremonies, are considered sacred. They are ancient natural sanctuaries that have supported the growth of several interesting and rare species of flora and fauna a single or cluster of sacred trees. This amazing and rich sacred plants are getting depleted these days as Many industries are leaving harmful gases into the atmosphere which mixes with the air and makes it toxic and eventually leads to acid rain which affects the growth of sacred plants. Human activities such as urbanization may lead to decrease in the forest level leading to ecological imbalance. Due to all this reasons plants are affected by some air borne diseases also Habitat destruction, Habitat fragmentation, over exploitation of resources, invasion of exotic species, pollution, Global environmental changes and predators have been main reason for the destruction of sacred plants. All this leave adverse effect on us such as Loss of valuable Gens, Loss of cultural diversity, Loss of ecosystem etc, .Hence it is our duty to save the Sacred plants by some of the measures like, Protection of Habitat, Preventing the over exploitation of sacred plants, Reducing the pollution, Checking deforestation and promoting afforestation, Restriction of exoctic species, public awarenass.

## HISTORY OF SACRED GROVES OF VIKARABAD DISTRICT

Sacred groves (SGs) are small groves that are specific places which are protected and conserved by the local communities as being the sacred residences of local deities and sites for religious and cultural rituals. They serve as valuable store houses of biodiversity. They are part of biological heritages and systems that has helped to preserve the representative genetic resources existing for generations. Sacred groves are the important places in which biodiversity is preserved in mostly undisturbed condition because of certain taboos and religious beliefs. Sacred groves are ancient natural sanctuaries that have supported the growth of several interesting and rare species of flora and fauna of the past. In the district many centers are considered under sacred grove category. Places of sacred groves. In the above sacred groves species like *Achyranthes aspera*, *Aegle marmelos*, *Azadirachta indica*, *Butea monosperma*, *Calotropis gigantea*, *Cannabinus sativa*, *Clerodendrum indicum*, *Cynodon* sp., *Eclipta prostrate*, *Ficus benghalensis*, *Ficus glomerata*, *Ficus religiosa*, *Ficus retusa*, *Gmelina arborea*, *Hordeum vulgura*, *Lawsonia inermis*, *Madhuca indica*, *Mangifera indica*, *Ocimum sanctum*, *Pongamia glabra*, *Prosopis cineraria*, *Saraca indica*, *Streblus asper*, *Syzygium jambolanum*, *Tamarindus indica* and *Tectona grandis* are commonly found in this district.

### SIGNIFICANCE OF SACRED GROVES

They are part of biological heritages and systems that has helped to preserve the representative genetic resources existing in the surrounding regions for generation. Sacred groves were a feature of the mythological landscape and the cult practice. Altogether the taboos, self-imposed restrictions and extra care exhibited by the community have significantly contributed in preserving the groves intact and in good shape there by conserving the whole range of biodiversity that is housed in it. The sacred groves offer manifold ecological benefits in conservation of biodiversity. In fact the sacred groves represent the first major effort in conserving the biodiversity. The sacred groves also provide an ideal surviving habitat to several species of endemic flora and fauna.

### ABOUT VIKARABAD DISTRICT

Vikarabad was founded and is named after fifth Paigah Amir (premier noble) H.E. Nawab Sir Vikar-ul-Umrah Bahadur, Sikander Jung, Iqbal-ud-Daula and Iqtadar-ul-Mulk, Nawab Muhammed Fazaluddin Khan KCIE served as prime minister of Hyderabad State and Berar Province between 1893 and 1901. This district central part of the Deccan plateau and lies in between 17° 20' and 18° 20' of North latitudes and 77° 54' and 79° of East longitudes at Mean sea level 625.67mts. The forest cover is classified as a Southern Tropical Dry Deciduous type. Categorized, under group 5 A/C-3 type of forest. The forest is of inferior type because of less rainfall, poor soil conditions and ever increasing biotic influence. The climate of the area is characterized by a hot summer of long duration and generally a dry weather, except during South-West monsoon season. The average annual rainfall is about 960mm, the bulk of which is received through the South West monsoon during June to September. The types of soils are predominantly black and red. The Mandals under the study are partly covered by the forest area with interspersed human habitations, small villages and tribal thandas.

### MATERIALS AND METHODS

Intensive field work was undertaken by the author for a period of five years from January 2007 to December 2011. Good rapport was established with the people locally well known herbal healers during these visits various religious people who are still practicing traditional medicine are identified, religious ceremonies were made to collect the information different folk role group of people who use plants materials in different rituals, ceremonies and any other religious purposes. The information on medicinal uses of the plants was also gathered from the local and folk role people residing in the interior areas of the district and the published literature. The data on the botanical names, family, vernacular names, religious virtues, parts used and medicinal uses along with active principle and status were also mentioned in the work. Important voucher specimens have been kept in the Herbarium, Department of Botany, SAP College Vikarabad.

## SACRED GROVES FLORA OF VIKARABAD DISTRICT

Botanical name	Botanical name	Religious virtue	Parts used	Diseases Cured	Availability status
Amaranthaceae	<i>Achyranthes aspera</i>	The plant is offered to the Hindu deity Ganesh during holy month of Badrapada.masam	Whole plant	Fever, Tooth problem, Scorpion sting	Wild
Anacardiaceae	<i>Mangifera indica</i> L.	Leaves are used in all religious ceremonies; twigs are used as samidha and as offering to sacred fire (Havan kunda).	Leaves, fruits, bark, seeds	Leaves are used for cough, asthma, bronchitis, diarrhea, fever, diabetes and high blood pressure; fruits are digestive given in hemorrhoids of uterus, lungs and intestine; laxative and diuretic, seeds anthelmintic, bark is useful in amoebic dysentery.	Cultivated
	<i>Mangifera indica</i> L.	Twigs are used as samidha and offered to sacred fire (Havan kunda)	Latex Unripe fruits.	Heal cracks Unripe fruits	Cultivated
		Used in death rituals	Whole plant	Cough and Fever	Wild
Arecaceae	<i>Cocos nucifera</i> L. Ln. Narikol	All religious, rituals, ceremonial sacrifices etc from cradle to grave, coconut plays very important role. Its leaves are also used in decorating Marriage gate	leaves	Coconut water cooling, diuretic, nutritive, aphrodisiac used in dysentery and diarrhoea.	Cultivated
Asclepidaceae	<i>Calotropis gigantea</i> (L.) R.Br.	Leaves and flowers are used to worship lord Shiva and Ganesha	Letex	Bone Fever	Wild
	<i>Calotropis gigantea</i> (L.) R.Br.	Ganesh puja, shiva Hanuman puja	Whole plant and flower	Cough, asthma, fever	wild
Asteraceae	<i>Eclipta prostrata</i> (L.) L.	Used in death rituals, Nepali people used the plants at the time of offering panda.	Whole plant	Leaves used for cough and fever, used in hepatic and spleen enlargements and in skin problems, root emetic and purgative, applied in wounds	Wild
	<i>Tagetes erecta</i> L.	Wreath (Mala) made of flowers used in Bhatriditiya, a brother-sister's festival.	Flower, bark, root, and whole plant	Infusion of herbs used against rheumatism, cold and bronchitis. Leaves and flowers used as carminative, diuretic and vermifuge.	Cultivated
Dioscoreaceae	<i>Dioscorea bulbifera</i> L.	Tubers regarded sacred boiled and eaten in Magh Bihu	Tuber	Tubers used for abscess and ganglionar inflammation, tubers used in piles, dysentery	Wild
Fabaceae	<i>Pongamia glabra</i> (L.) Pierre	Marriage Ceremony	Leaves	feaver	Wild

Lamiaceae	<i>Ocimum sanctum</i> L.	Hindus plant this tree in their houses as a holy plant and offer a diya to it.	Leaves	Coughs, Ringworm, Skin diseases and Earache	Cultivated
	<i>Ocimum sanctum</i> L.	Puja and Prosad in Kati Bihu, Assamese people plant the sapling and kindle a diya under it, the disciples of Lord Krishna, Chaitayanya wear 'Tulsi Mala' around their necks	Whole palnt	Leaves used for coughs, inflammations, ringworm and other skin diseases, earache, root is given in Malaria, root soil used for skin disease.	Cultivated
Lythraceae	<i>Lawsonia inermis</i> L.	Marriage Ceremony	Leaves	Skin disease, Typhoid	Cultivated
	<i>Lawsonia inermis</i> L.	Marriage ceremony and sacrifice.	Leaves	Leaves used as cooling agents, hair dye, used in skin disease, tuberculosis and typhoid.	Cultivated
Malvaceae	<i>Gossypium arboretum</i> L.	Cotton used in Diya and all religious ceremonies, sacrificial thread 'lagun' used by Brahmins	Roots, seeds	Roots diuretic, used in diarrhea, dysentery, leprosy and skin disease, seeds used in gonorrhea	Cultivated
Meliaceae	<i>Azadirachta indica</i> Juss. L.	Twigs are hanged over the doors when there is smallpox in epidemic form. Twigs are also used widely in festival of Bonalu.	Twigs and leaves	Tooth Problems, Skin problems	Wild
Mimosaceae	<i>Prosopis cineraria</i> (L.) Druce	Festaval of Dasara	Leaves	Un wanted hairs	Wild
Moraceae	<i>Ficus baghalensis</i> L.	Marriage ceremony	Bark and latex	Powder of bark and latex are applied in rheumatic pains, infusion of bark is effective in diabetes, dysentery, gonorrhea and seminal weakness.	Wild
	<i>Ficus glomerata</i> Roxb.	Used in Marriage ceremony	Stem Bark Fresh Fruits.	Snake bite Red discharge Diarrhoea	Wild
	<i>Ficus racemosus</i> L.	Ceremonial sacrifice, Mising people eat the tender leave in various rituals. and Tribes people make dish from the leaves for any religious festivals	Bark and latexan fruit	Used for piles, and diarrhea, fruits are carminative bark anti-diabetic.	Wild
	<i>Ficus religeosa</i> L.	Vishnu and Pitri puja, in Yayna Karma, marriage, 'Upanayan'	Bark, fruits	Bark used for gonorrhea, young shoots and fruits laxative, fruits used in asthma.	Wild
	<i>Ficus religiosa</i> L.	Used in Marriages and 'Upanayan'	Stem bark	Wounds, Sprains	Wild
	<i>Ficus retusa</i> L.	This leaf is one of the pancha bilwas and used in Devi pooja	Leaf		



	<i>Ficus bengalensis</i> L.	Used in Marriage ceremony	Leaves, Roots	Hair growth Piles	Wild
	<i>Streblus asper</i> Lour.	A Widower whose spouse died untimely, marries a 'Saura' tree to overcome the ill effect of the planets after which he can marry again	Leaves, bark, roots	Ulcers, Sinuses, Swellings and boils, fevers, diarrhea and dysentery	Wild
	<i>Musa sapientum</i> L. Ln. Kol	Satya Narayan Puja, Prosad, Mandap and all other religious ceremonies, leaves used as plates for prosad, in Assamese society it is a sacred plant.	Whole plant	Fruits used in loose motion and flower juice mixed with curd given in dysentery and menorrhagia.	Cultivated and wild
Nymphaeaceae	<i>Nelumbo nucifera</i> Gaertn.	Ceremonial, puja and sacrifice.	Whole plant	Roots used for ringworm, dysentery and dyspepsia, seeds used to stop vomiting, diuretic, anti-fungal, flowers astringent and cooling	Wild
Papilionaceae	<i>Butea monosperma</i> (Lamk.) Taub.	Flowers offered to gods in 'Holy' festival	Bark	feaver	Wild
		Flowers are using in 'Holy' festival	Bark	Piles, Tumors and menstrual disorder, antiseptic and cooling	Wild
Peperaceae	<i>Piper betle</i> L.	In all puja and sacrifice betel leaves are important.	Leaves	Free digestion	Cultivated
Poaceae	<i>Cynodon dactylon</i> Pers. Ln	Ganes puja, Shiv puja and in any other sacred rituals	Whole plant	Hemostatic and in uterine hemorrhage.	: Wild
	<i>Horduem vulgure</i> L.	Used in Marriage Ceremony	Seeds	Improve Digestion	Cultivated
	<i>Oryza sativa</i> L.	In all Poja and sacrifice rice is used, mixed with ghee, sesame used in fire sacrifice (Hom). The use of 'Rice tika' in the forehead is seen in some Hindu communities.	Grains	Leaves are used for asthma, , fever,	Cultivated
	<i>Cynodon dactylon</i> Pers. Ln	Ganes puja and in any other sacred rituals	Whole plant	Body cooling Diarrhoea	Wild
	<i>Demostachya bipinnata</i> . Stapf.	Rishi and Pitri puja, Kushasan, in every ritual.	Root	Roots used as diuretic, galactagogue, in Ashma and jaundice	Wild
Rhamnaceae	<i>Ziziphus mauritiana</i> Lam.	The plant twigs used to expel the spirits from the house or from their compound by some tribal people of this region.	Leaves, fruits, root	Roots are useful for fever, wounds and ulcer, leaves used in typhoid fever, fruits are aphrodisiac, seeds used in pox.	Cultivated, wild
Rutaceae	<i>Citrus medica</i> L	Ceremonial sacrifice	Roots, Fruits		Cultivated
	<i>Aegle marmelos</i> L	Shiva Pooja cannot be performed without its leaf (Bilwa)	Leaves and Fruits	Diarrhoea, Dysentery and Skin Problems	Wild

Santalaceae	<i>Santalum album</i> L.	Wood paste (Chandan) and wood stick are used in all pujas. The widows take white chandan spot on their foreheads.	Wood	Paste of wood stick applied on normal burns and prickly heat	Wild and cultivated.
Sapotaceae	<i>Madhuca longifolia</i> var. <i>latifolia</i> (Roxb.)Achev	Marriage Ceremony	Stem bark	Body pains Dog bite.	Wild
Solanaceae	<i>Datura metel</i> L.	Shiv Puja specially in Shivaratri	Leaves, seeds	Leaves used in Asthama, epilepsy, seeds are used in leprosy and dog bite.	Wild
Verbenaceae	<i>Clerodendrum indicum</i> (L.)Kuntze	For worshipping fire	Roots, leaves	The bark of root is used for Asthma, Chest pain, cough; leaves are useful for Cholera and fever.	
	<i>Gmelina arborea</i> Roxb. Ln.	Ceremonial sacrifice	Leaf	Cough and cold	Wild
	<i>Clerodendrum indicum</i> (L.) Kuntze	Used for worshipping Fire	Roots, Leaves	Asthma, Chest pain, cough, Cholera and Fever	Wild
	<i>Vitex nigundo</i> L.	Twigs used in Nepali marriage, in worshipping jungle god	Leaves	Leaves are used in blister, boil, body ache, cold, cough, fever, gum trouble, piles and rheumatic pain.	wild
Zingiberaceae	<i>Curcuma longa</i> L.	Marriage ceremony and few other rituals	Rhizomes	Turmeric powder is antiseptic, used for skin disease, cough, cold and asthma.	Cultivated

## RESULTS

Altogether 47 different plant species have been identified as sacred plants by different ethnic groups of Vikarabad district. Though there is many more information about sacred plants but only some of the most commonly used plants having medicinal value are taken into consideration. During this project work some important information have been unearthed. Few such informations are given here below. There is a long experienced traditional belief among the people that they have selected some plants which are edible or not edible during or after the religious works. According to Gautamiya Tantra during the religious works, a person should eat boiled sunned rice and ghee. The Agasthya Samhita opines that the following materials may be eaten during the religious works. These materials are *Cocos nucifera*, *Musa sapientum*, *Mangifera indica*, *Phyllanthus emblica*, *Artocarpus heterophyllus*, *Terminalia chebula*, *Oryza sativa*, *Vigna radiata*, *Sesamum indicum*, *Hordeum vulgare*, *Chenopodium album*, *Chorcorus capsularis*, *Raphanus sativa*, *Citrus aurantifolia*, *Citrus aurantium* etc. Plants not edible before or during religious works: According to Yoginitantra the following plants should not be taken before or during the religious works. The plants are *Tamarindus indica* (*Teteli*), *Cajanus cajan* (*Urohi*), *Benincasa hispida*, *Cocos nucifera* (*Narikol*) etc. The widows should not eat onion, all kinds of spices and chilly.

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## 6. Indigenous Curative Plants Used in Curing of Piles from Adilabad District of Telangana State, India

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### Abstract

The present work deals with the Ethnobotanical knowledge on human medicine practiced by tribal communities and other local healers of Adilabad district. The existing report is rigorous on the ethnic knowledge of indigenous remedial medicinal plants curing in piles by pastoral people of Telangana, India. A total of 17 species were recorded as natural therapeutic plants treating in piles. Of individual's species, representing 16 families. The extreme, herbs were in the information are measured. In the present results the importance of the indigenous remedial plants wisdom has been observed. Apart from efforts are ruined to educate the further generations about their importance, it may be missing in future. This diversity of information might contribute comprehensively in modern drug conniving or in government policies to advancement contemporary innovative drug design systems in rural, folkloric areas, and in the enhancement of advance formulas with reference to indigenous remedial medicinal plants.

**Keywords:** Indigenous therapeutics, curative plants, piles therapeutic

### Introduction

The report on tribal medicine should be subjected to critical scientific evaluation. New drugs may be obtained to fight the diseases. Since time immemorial human beings have been using plants for their survival and development. In the beginning they were food gatherers and hunters of food, but subsequently concentrated on plants that are useful for other purposes, such as for shelter, health care and artifact. The understanding of the use of plants for food, health care, shelter, agriculture and other purposes got accumulated over generations as traditional knowledge. Ethnobotany is a distinct branch of natural science dealing with various aspects such as anthropology, archaeology, Botany, ecology, economics, and medicine, religious, cultural and several other disciplines. The consequences of indigenous remedial medicinal plants in

indulgence piles has not been acknowledged perfectly from rural, folkloric background of Indian society. Adilabad ranks second among all the districts in the state in terms of forest area. The district forests are occupying about 40 per cent of the total geographical area. India has been considered a rich in bio - diversity of medicinal plants and their indigenous cleverness. Piles are very common in around the Adilabad. Due to high temperature water conditions different than other areas of the same district. Piles are inflammation of the blood vessel that generally nearby in anal canal. The piles are produce when the anal cushions are disrupted by the power of defecation. The stool uniformity and defecator routine for countless wounded are almost positively to clam. The smash up is increases due to hard stools which is vigour of shearing. There are two types of piles; internal piles and external piles. Piles are frequently painstaking as one of the most familiar gastrointestinal illness with an elevated occurrence . Features such as uneven bowel routine and less-fiber starve physically as well as inheritance may lead the enduring to this stipulation. Hemorrhage from the lower gastro-intestinal sections is the majority expected to be the chief widespread etiological motivation of the commonness of haemorrhoids. Anal pain and discomfort, itching, bleeding, swelling, and perceived mass in the perennial region are painstaking as the major indications of hemorrhoids .The majority of the people that living in villages have been using the home-grown plants for medicinal purpose. In vision of the fact that ages because the information on the subject of local plants is transfers from generation to generation and it is based on the experiences lifelong. That people living in villages mostly have less suitable physical condition services because villages have long distance far away from the central cities. Adilabad is known for its significant forests and Adivasi forest dwellers which include various tribal communities existing since centuries and has a strong social, historical and cultural back ground. The tribal community of Adilabad district includes primarily Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras. A brief account of their communities is given below. The neighbouring people use the several plants or parts of plants in the earliest therapeutic prose in curing the diseases such as piles . The extract has the super enzymes which originate from the plants, which is used to treat the trouble of piles .Piles are haemorrhoids which are enlarged veins located in lower part of anus and rectum. These veins become inflamed because of increased pressure within them. Piles can be of two types, one is the internal piles and the other is the external piles and can be of different sizes. Internal piles generally effects within 2 to 4 cm above the opening of rectum. Internal piles are more common which are painless but makes presence known due to bleeding with movement of bowel which is

the only sign of this. They may cause prolapse through the rectum. The other type of piles is the external piles, medically termed as perianal hematoma which affects the outer side of the rectum. One can see and feel it and is very uncomfortable. Sometimes blood clots are formed within the external haemorrhoids which causes extreme pain. As no appropriate medical rehabilitation is accessible for such piles, it is imperative to search for some new or less known medicinal plants, which are potential source for new bioactive compounds of therapeutic significance. The present exertion is an effort to document and analyze the ethnic facts relating to the custom and exploit of indigenous remedial therapeutic plants in healing in treating piles. So that the present work carried out around the villages of Adilabad district head quarter of Telangana.

### Materials and Methods

A number of countryside trips were undertaken in south districts of study area. At each one time of trip, diverse folkloric and forest or rural people's information was collected in different seasons. The information was accrued after discussions with several users like village head, elder women and other local informants. Frequent interviews through questionnaires were made in diverse villages to substantiate the information. Plant specimens were collected and identified with help of floras. The study area Telangana is one of the southern states of India. The state is drained by two major rivers, with about 79% of the Godavari river catchment area and about 69% of the Krishna catchment area, but most of the land is arid. It is an extensive plateau with an average elevation of about 400 m above sea level. This plateau consists mainly of the ranges of erosion surface: (i) above 600 mt, (ii) from 300 – 450 mt and (iii) from 150 – 300 mt. The State Telangana has the monsoon type of tropical climate. On the whole State enjoys warm climate. In northern Telangana tropical rainy type of climate prevails. Hot Steppe type of climate is noticed in the southern parts of the State. In Tropical Rainy type, the mean daily temperature is above 20 °C with an annual rainfall of 150 to 200 cms, mostly in summer and South-West monsoon. In the Hot Steppe type, the mean daily temperature is 18 °C and less. In the state of Telangana Maximum temperature in the summer season varies between 37 °C and 44 °C and minimum temperature in the winter season ranging between 14 °C and 19 °C. The State has a wide variety of soils and they form into three broad categories - red, black and laterite. The type of forests met within Telangana, as per the classification of Champion and Seth are Tropical moist deciduous forests, Southern dry deciduous forests, Northern mixed dry deciduous forests, Dry savannah forests and Tropical dry evergreen scrub. In the Telangana there is about more than 20 tribes were recorded. Commonly they are located hilly and interior forest areas. The

research report focussing on a number of the important wild medicinal plants, which need to be documented for diverse usages in future.

### Results and Discussion

In the present report sum numerical of 17 species were recorded as natural-therapeutic plants treating in piles. Of individual's species, representing 16 families. The extreme, herbs were in the information are measured. In the present results the importance of the indigenous remedial plants wisdom have been observed. Apart from efforts are ruined to educate the further generations about their importance, it may be missing in future. This diversity of information might contribute comprehensively in modern drug conning or in government policies to advancement contemporary innovative drug design systems in rural, folkloric areas, and in the enhancement of advance formulas with reference to indigenous remedial medicinal plants. In the current reported effective plants against also used for effective against diabetics with related to piles. In attendance documented plants from the Mahabubnagar region also having antibacterial activities from previous reports of Nigeria. Out of 17 species from current report new formulations documented when compared with previous reports from ethno-botanical survey of wild plants used to cure piles. The frequent field trips have been conducted on indigenous medicinal plants and traditional medicines. In many countries, the local people used the ethno medicinal plants for purpose of medicines. The ethno botanical studies demonstrated the dosages that acquired from plants or parts of plants are used to treat the piles. Rural areas the customary plants are used to cure piles. The plants parts are being used for the healing of disease, from the prehistoric times.

**Table 1. The important indigenous remedial medicinal plants used in treating piles.**

Botanical name	Family	Habitat	Local name	Part Used
<i>Abelmoschus manihot</i>	Malvaceae	Climber	Budda benda (Telugu), Athibala (Hindi)	Leaves juice
<i>Abutilon indicum</i>	Malvaceae	Climber	Thuthura benda (Telugu), Athibala (Hindi)	latex
<i>Achyranthes aspera</i>	Amaranthaceae	shrub	Uttareni (Telugu), Aapang (Hindi)	Greeny Bark
<i>Adhatoda vasica</i>	Acanthaceae	Herb	Addasaramu (Telugu), Adoosa (Hindi)	Ripened leaves



<i>Aegle marmelos</i>	Rutaceae	Tree	Maaredu (Telugu), Bilva (Hindi)	Fruit pulp
<i>Aloe barbadensis</i>	Liliaceae	Herb	kalabanda (Telugu), Gheekanvar (Hindi)	Bark peel
<i>Aristolochia bracteata</i>	Aristolochiaceae	Climber	Gaadaparaku (Telugu), Kitamar (Hindi)	Leaves
<i>Butea monosperma</i>	Papilionoideae	Tree	Mooduga (Telugu), palaas (Hindi)	Leaf base
<i>Cocus nucifera</i>	Arecaceae	Tree	Kobbari (Telugu), Nariyal (Hindi)	Roots
<i>Gynandropsis pentaphylla</i>	Capparidiaceae	Herb	Nya malle (Telugu), Zasmin (Hindi)	Young leaves
<i>Gymnosporia montana</i>	Celestraceae	Srub	Dantha (Telugu), Chota Dudhila (Hindi)	Bark
<i>Mimosa pudica</i>	Mimosoideae	Climber	Attipathi (Telugu), Lajjalu (Hindi)	Leaves
<i>Ocimum basilicum</i>	Lamiaceae	Herb	Advi tushi (Telugu), Sabja (Hindi)	Leaves
<i>Phyllanthus emblica</i>	Euphorbiaceae	Tree	Usiri (Telugu), Amla (Hindi)	Fruit
<i>Plumbago zeylanica</i>	Plumbaginaceae	Herb	Agni maata (Telugu), chatawar (Hindi)	Leaves
<i>Termina chubula</i>	Combretaceae	Tree	Karka (Telugu), balahar (Hindi)	Fruit
<i>Tinospora cordifolia</i>	Menispermaceae	Climber	Thippa theega (Telugu), Guloye (Hindi)	Olden leaves, Seeds

### Conclusion

In the instant the people are escalating profusely, at the same time people are forgetting their indigenous remedial medicinal plants information. The work outcome will be possessions on future health care. Subsequently, work into initiations are needed to undertake widespread education about their importance as a medicinally importance and as a direct and indirect source of safeguarding in health care system for the future generations. A very few of the indigenous remedial medicinal plants are available in the treating of piles. So, efforts must be affianced to

safeguard indigenous remedial medicinal plants and also the rustic brainpower for prospect health care systems.

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## DIVERSITY AND INDIGENOUS USE OF SOME ETHNOMEDICINAL PLANTS IN ANANTHAGIRI FOREST IN VIKARABAD DISTRICT IN TELANGANA

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### ABSTRACT

India is traditionally rich in plant diversity and is a huge reservoir of medicinal plants. The country with vast geographical expanse and amazing diversity in topography. Climate and physiographic conditions support almost all types of ecosystems, the medicinal plant's wealth varies greatly with the change in agro-climatic zones of the country, Fortunately, India is also an inhabitancy of the oldest wide variety of plants, animals, and ecosystems including medicinal plants. India has been considered as one of the twelve mega-biodiversity countries of the World having a rich biodiversity. The present study has been accomplished to collect and document the ethno-medicinal knowledge of Lambadi, Kurmas, Golla, Yerukala, Vaddera, Gangireddula. In the provincial Region of Ananthagiri forest situated in Vikarabad District of Telangana state. Extensive fieldwork was conducted and information was collected through questionnaires, interviews and discussions with tribal villagers or practicing Traditional healer, the study conducted in the aries dharur and Vikarabad surrounding areas. About 137 plant species of 36 families have been documented in this study and an itinerary is prepared according to the alphabetical order of the diseases, families along with the vernacular names, botanical; names, drug formulation of drug formulation and methods of drug administration as told by the herbal practitioners. The Practitioners also felt that of late their practice is dwindling due to non-availability of plants which were plenty till recently, due to loss of habitat and forest cover in this area. The method of herbal practice is also decreasing as the practitioners are not passing the knowledge to the next generations before their death and also due to lack of proper written documentation.

**KEYWORDS:** Medicinal Plants, Traditional Botanical Knowledge, Tribals, Disorder

### INTRODUCTION

Ethno medication is the information created by local and tribal individuals, with their everyday experience and exchange of learning from their predecessors. Folk role system still persistent in rustic and semi-urban territories of India, The rural and tribal people are depending on their traditional learning for treating illness. Ethno medicine is often low-priced, intact, tested and proved based on local resources and strengths, Ethnomedicine has advanced through perceptions, trials, and errors, and goes from one generation to other. These traditional and folk claims can be subjected to scientific investigations, it is likely that though such examinations new medications of common starting point might be found for treatment of many diseases and infection, for which there are little satisfactory cures available in current medicine

Documentation of Ethnobotanical studies of any area has attained importance due to fast depletion of folklore knowledge and their uses because of modern lifestyles. The present use of modern medicine is increasing the vulnerability of human beings to various illnesses of unknown nature. The dominant allopathic systems of Medicine though providing treatment to many diseases also cause deleterious side effects on the human body. All these factors are forcing the man to look for alternative sources more particularly from the plant origin. The usefulness and efficacy of the plants as curative agents of many human diseases is long known. Traditionally, the knowledge of plants as a source of medicines for different diseases is well known through traditional medicinal systems of Ayurveda, Siddha, Unani, Homeopathy, Chinese's and Tibetan medicine. The vast tracts of Indian sub-continent and its rich flora and fauna are still to be explored. The people living in the forests and its vicinity and tribals are using many plants for several health problems. These people living away from modern society, due to lack of proper health care, still depend on the folklore medical practices for primary health care. The ethno-botanical survey of the area under study includes Vikarabad, Dharur and their surroundings of Vikarabad Dist. It is located on the central part of the Deccan plateau and lies in between  $17^{\circ} 20'$  and  $18^{\circ} 20'$  of North latitudes and  $77^{\circ} 54'$  and  $79^{\circ} 34'$  of East longitudes at Mean sea level 625.67mts. The forest cover is classified as a Southern Tropical Dry Deciduous type. Categorized, under group 5A/C-3 type of forest. The forest is of inferior type because of less rainfall, poor soil conditions, and ever-increasing biotic influence. The climate of the area is characterized by a hot summer of long duration and generally dry weather, except during South-West monsoon season. The average annual rainfall is about 90mm, the bulk of which is received through the SouthWest monsoon from June to September. The types of soils are predominantly black and red. The mandals under the study are partly covered by the forest area with interspersed human habitations, small villages, and tribal thandas. They use many plants for various ailments as well as food, fibers and other uses. Many of these plants are endemic and not known to the outer world. The knowledge of plants using as medicines gained by the people through generation is being lost through passing generations. Due to lack of education, prevailing myths and misconceptions this knowledge could gradually be lost under the pressure of human activities. Once we lose them it will be a permanent loss for us. Keeping in view of the above factors the present study has been under-taken in the mandals of Vikarabad, Dharur and their surrounding areas. The information gained in this study will definitely be useful in preparing medicines and extracting active principle substances form the plants to help cure many ailments with better therapeutic value. The study of chemical properties of the plant extracts and their efficacy evaluation scientifically will be useful in providing better Medicare for the rural people.

## METHODOLOGY

The present study includes the survey of nearly 40 villages in Vikarabad, Dharur mandals and their surroundings of Vikarabad Dist, during the last two year (May 2016 – May 2018). Several villages of the target area have been visited to find out resource persons, herbal practitioners, and village heads. Resource persons with great known how pertaining to folklore practices were identified after conducting 2-3 trips to the villages. However, a few villages were identified with the people having potential knowledge in the use of medicinal plants for different ailments.

After establishing a better rapport with the villagers, herbal practitioners' information was gathered and documented. Although with best efforts to retrieve the information about the plants, their products used as curative agents by the herbal practitioners, only limited information could be collected. In certain of the cases, local practitioners were reluctant to reveal the information due to myths and misconceptions. But the people who gave the information and helped

us in this project were very open-minded. Once they listened to our aims and objectives of the documentation, got realized and came forward openly to give their knowledge to be documented. Regular field trips were conducted to the villages of Vikarabad, Dharur, and other surrounding mandal villages. In interesting cases, one or two long distance villages have also been covered to get the information during all seasons. The Ethnobotanical data were collected and recorded following the standard procedures (Jain S.K, 1995.) by interacting with as many as 40 herbal practitioners and elders of the villages. Plant specimens were collected during the survey in different seasons and prepared herbarium specimens and identified with the help of floras. It is deposited with the Botany department SAP College, Vikarabad. The plant specimens collected were identified and cross-checked with the Herbarium of Department of Botany, PG College of Science, Saifabad, Osmania University. In this study, the local (vernacular) name of plants being used, preparation of the drugs, methods of administration and precautions regarding food and avoidances and other practices were systematically recorded and documented. For identification and cross-checking frequent visits were made to the Botany department Herbarium, PG.College of Science Saifabad, Osmania University, Hyderabad.

**Table 1: Enumeration of Species**

	<b>Botanical Name and Family Name</b>	<b>Vernacular Name</b>	<b>Medicinal Use</b>	<b>Part Used</b>	<b>Mode of Administration</b>
1	<i>Acacia farnesiana</i> (L.) Willd.(Mimosaceae)	Kasturi tumma, Muriki tumma	Mad dog bite (Verri kukka katu):	Stem bark	10 ml stem bark juice is given internally twice daily for three days
2	<i>Acacia nilotica</i> (L.)Del. (Mimosaceae)	Nalla tumma	Toothache	Stem bark	Clean teeth with stem bark ash daily till cured.
			Burns and Wounds		Apply stem bark ash by mixing coconut oil till cured
3	<i>Acalypha indica</i> L. (Euphorbiaceae)	Muripindi, kuppinta	Ring worm:	Fresh leaf	Collect fresh leaf juice and add turmeric powder and salt into it. Apply externally once a day till cured
4	<i>Acanthospermum hispidum</i> DC. (Asteraceae)	Kanigera alam, Guntakalagaraku	Cuts	Leaves paste	Leaves paste is applied on the affected part of the body once a day for 3-4 days.
			Wounds		Make a fine paste with leaves by adding tea spoonful of curcuma powder. Apply this paste externally on affected part once daily till cured.
5	<i>Achyranthes aspera</i> L. (Amaranthaceae)	Uthareni	Burns	Leaf extract as a lotion	Apply leaf extract as a lotion for 2-3 days.
			Toothache	Leaves juice	2 ml Leaves juice and dilute 1 g rock salt into it. Pour 2- 3 drops into the ear. If the tooth pain is on right side pour drops in the left ear and vice versa.
6	<i>Aegle marmelos</i> (L.)Corr. (Rutaceae)	Bilvamu, Maredu	Arthritis	Leaves	Make a paste with leaves and mix equal quantity of sesame oil. Apply this paste externally on the affected part once a day till cured
			Dysentery		10 g of semi burnt fruit pulp is given twice a day for 2- 3 days.
7	<i>Aerva lanata</i> (L) R.Br. (Amaranthaceae)	Pindikura	Abdominal pain	Root	10 ml root decoction is given internally once in the early morning for 3 days

Table 1 Contd.,

8	<i>Agave Americana</i> Linn. (Aga vaceae)	Sakari matta	Ulcers	Leaf	50 g leaf pulp is given with 1 g sugar for 30 days to cure ulcer completely
9	<i>Ageratum conyzoides</i> L. (Asteraceae)	Ganagaju	Burns	Fresh leaf	Apply fresh leaf juice on the affected part
			Urinary infection		10 ml of leaf extract is given orally twice daily for three days
10	<i>Ailanthus excelsa</i> Roxb. (Simaroubaceae)	Pedda manu	Leucorrhoea	Stem bark	Make stem bark juice by adding 5g of <i>Piper longum</i> and 5g of <i>Cuminum cyminum</i> . 10ml juice is given thrice a day for one day.
11	<i>Alangium salvifolium</i> (L.f.) Wang (Alangiaceae)	Uduga,	Arthritis:	Stem bark	Grind together handful of stem bark with five fruits of black pepper and wrap it in cotton cloth to dip in 250 ml of hot water for fifteen minutes. 100 ml of this solution is given internally for one time, repeat it after a week if necessary
			Stomach pains		Make leaf juice and add double quantity of cow ghee to the juice. Given this medicine orally once daily for three days
12	<i>Albizia amara</i> (Roxb.) Boivin (Fabaceae)	Narlingi	Fever	Stem bark	5 g each of stem barks of <i>Albizia amara</i> , <i>Azadirachta indica</i> , <i>Zizyphus oenoplia</i> , <i>Capparis zeylanica</i> , <i>Ricinus communis</i> , and <i>Cassia fistula</i> are pounded together to make powder and mix one tea spoonful of powder made into decoction in 100 ml of water and filtered. The decoction thus prepared is given internally twice a day for two days.
13	<i>Allium cepa</i> L. (Liliaceae)	Ulligadda,	Immunity	Cut fresh onions	Cut fresh onions and eat them as salad during lunch and dinner.
14	<i>Allium sativum</i> L. (Liliaceae)	Thella gadda	Swellings	Bulb paste	Bulb paste is applied on the affected part once a day till cured
15	<i>Aloe vera</i> (L.) Burm.f. (Liliaceae)	Kalabanda	Red discharge in woman	Leaves	Given 100 g leaf pulp with sugar once a day till cured.
			Burning sensation while urination		Given 50 g leaf pulp with 10 g glucose for 3 days.
16	<i>Alternanthera sessilis</i> (L.) DC (Amaranthaceae)	Ponnagantikura	Night blindness	Leaves	Make curry with leaves and given once a week.
17	<i>Alysicarpus monolifer</i> (L.) DC. (Fabaceae)	Amera	Wounds	Leaf juice	Apply leaf juice on wounds twice daily for three days.
18	<i>Amaranthus spinosus</i> L. (Amaranthaceae)	Nalladoggata	Cuts Burns	Fresh leaf	Apply fresh leaf juice on the affected part.
19	<i>Amaranthus tricolor</i> L. (Amaranthaceae)	:Chirraku, Mulla thotakura	Scabies	Root paste	Root paste is applied (mix 0.5 g of sulphur for 100 g paste) externally once daily till cured.

Table 1 Contd.,

20	<i>Andrographis paniculata</i> (Burm.f.)Wall. ex Nees(Acanthaceae)		Controlling high BP	Whole plant	Ground whole plant with 10 fruits each of <i>Piper longum</i> , and <i>Piper nigrum</i> and make 5 g of sized pills. One pill is given orally until comes to the normal.
			Stomach pain		One tea spoonful of powder is given internally through cow milk for one time.
			Fever		This plant is decocted with 3 fruits of black pepper. 10ml decoction is given internally thrice daily until cured
21	<i>Annona squamosa</i> L. (Annonaceae)	Seethaphal	Arthritis	Leaves	Leaves paste is applied externally on affected part once daily till cured.
22	<i>Anthocephalus cadamba</i> (Roxb) Miq.	rudraganam, kadamba	Dysentery	Stem bark	10 ml of stem bark juice is given with one glass of water once daily for three days.
23	<i>Argemone mexicana</i> L. (Papaveraceae)	Ulli vinjara, Yerrickusuma	Swellings	Milk sap	Milk sap is applied externally on the affected part twice daily for 2-3days
			Skin allergy		Milk sap is applied externally on affected part once daily for 3-4 days
24	<i>Argyrea nervosa</i> (Burm.f.)	Telugu:samudra pala	Skin allergy	Leaves	Apply leaves paste on affected part once daily till cured.
25	<i>Aristolochia bracteolata</i> Lam (Aristolochiaceae)	Gadida gadapaku	Stomach pain	Fresh leaves	Grind 3 fresh leaves with 3 fruits of <i>Piper nigrum</i> and mix this into 20 ml water. 20 ml juice is given orally for one time only.
26	<i>Aristolochia indica</i> L.(Aristolochiaceae)	Nalla eswari	Skin infection		10 ml of root decoction is given internally once daily in the morning for a week.
27	<i>Asparagus racemosus</i> Willd.(Liliaceae)	Satavari, callagadda, pillipechara,	Mouth ulcers	Root powder	Make root powder along with seeds of <i>Abutilon indicum</i> . One tea spoon is given in the morning with sugar
			Enhance breast mil	Root powder	The root powder is given to the mothers internally along with water or milk once a day for two weeks
28	<i>Azadirachta indica</i> A. Juss. (Meliaceae)	Vepa	Fever	Stem bark	50 g stem barks of each of <i>Azadirachta indica</i> , <i>Zizyphus oenoplia</i> , <i>Capparis zeylanica</i> , <i>Ricinus communis</i> , <i>Cassia fistula</i> and <i>Albizia amara</i> boil in 1 liter of water for 15 minutes. 5 ml of decoction is given internally twice daily for 3- 4 days.
29	<i>Balanites aegyptiaca</i> (L.) Del.(Balanitaceae)	Gara chettu	Fever	Crushed fruit	Crushed fruit is given internally through the water once daily for three days
			Immunity	Leaf	Leaf chutney is prepared and eaten once in a week by locals during first rains (as on set of monsoon) to enhance immunity in their body to fight with the waterborne disease.
			Joint pains	Pulp of dried fruit	The pulp of dried fruit is used to cure joint pains in old people

Table 1 Contd.,

30	<i>Barleria prionitis</i> L.(Acanthaceae)	<i>Mulla gorinta,</i> <i>Gattugolimiti</i>	Toothache:	Fresh leaves	Chew the fresh stem piece for 5 min daily for 2 days.
			Arthritis		Roust fresh leaves and put them on the affected part when they are slightly warm once daily till cured.
31	<i>Basella alba</i> L.(Basellaceae)	Bachali kura	Anemia	Leaves	Make chutney with leaves of <i>Basella</i> <i>alba</i> , <i>Moringa oleifera</i> . Eat this chutney twice a week for 3 weeks to enhance their hemoglobin percentage
32	<i>Bauhinia racemosa</i> Lamk. (Caesalpiniaceae)	Are, Aare chettu	Arthritis	Stem bark	Make decoction with stem barks of <i>Bauhinia racemosa</i> , <i>Semecarpus</i> <i>anacardium</i> and 30 ml are given internally once a day for two days.
33	<i>Biophytum</i> <i>sensitivum</i> (L.)DC.(Oxalidaceae )	Muduchu thamara	Cut and wounds		Leaf pasteare applied externally once daily till cured.
			Gonorrhea		10 ml of root decoction is given internally once daily in the morning for 4 weeks
34	<i>Boerhaavia</i> <i>diffusa</i> L.,(Nyctagina ceae)	Atikamamidi	Anemia	Leaf juice	10ml leaf juice is given through honey daily once for 15 days
			Diarrhoea		Make a decoction with leaves and take 10ml orally twice daily till cured.
35	<i>Boswellia serrata</i> Roxb. (Burseraceae)	Andugu	Arthritis	Gum powder	One tea spoon full of gum powder is given through a glass of goat milk daily once till cured.
36	<i>Brassica juncea</i> ( L.) Czern.(Brassicaceae)	Avalu	Fever		Apply seed oil on the whole body mainly on chest part to control high fever particularly to the children.
			Skin infection		Semi rost the seeds and make a powder. Apply this powder along with coconut oil externally once a day for 4-5 days.
37	<i>Bridelia Montana</i> Willd. (Euphorbiaceae)	Panchothkam	Dysentery	Stem bark	One tea spoonful of stem bark powder is given internally along with one glass of warm water twice daily for 3 days
38	<i>Bridelia retusa</i> (L.) Spreng. (Euphorbiaceae)	Mulumaddi	Arthritis	Stem bark	50 g crushed stem bark is decocted in 100 ml sesame oil for 15 minutes and it is applied externally on affected part of the body once daily till cured.
39	<i>Bryonopsis laciniosa</i> (L.) Naud (Cucurbitaceae)	Ningi donda	Stomach pain	Seed	Ground 10 g seeds along with 5 g of <b>black pepper</b> to make powder. 10 g of powder is given internally as a single dose.
			Arthritis		Leaves are decocted with sesame oil and applied topically twice daily for 15 days
40	<i>Bryonopsis laciniosa</i> (L.) Naud (Cucurbitaceae)	Ningi donda	Stomach pain	Seed	Ground 10 g seeds along with 5 g of black pepper to make powder. 10 g of powder is given internally as a single dose.
			Arthritis		Leaves are decocted with sesame oil and applied topically twice daily for 15 days.



Table 1 Contd.,

41	<i>Buchanania lanzan</i> Spreng (Anacardiaceae)	Morri, morlichettu	Infertility	Seed	15 g seed powder is given with goat or cow milk internally during bed time after the fifth day of menstruation
42	<i>Butea monosperma</i> (Lamk.) Taub. (Fabaceae)	Mothuga, moduga	Fever	Dry flowers	Make a powder by the dry flowers of <i>Butea monosperma</i> , <i>Trachyspermum ammi</i> , <i>Cuminum cyminum</i> , <i>Piper nigrum</i> , <i>Zingiber officinalis</i> . Table spoon powder is given orally daily in the morning and evening till cured.
			Intestinal worms	Flower decoction	50 ml flower decoction is given orally for one time.
			Infertility	Stem bark	50 ml of stem bark extract is given internally for three days to check conception
43	<i>Caesalpinia bonduc</i> (L.) Roxb. (Caesalpinaceae)	Gacha	Intestinal worms	Seed pulp	5 g of seed pulp powder is mixed into one glass of water and given, twice daily till cured
44	<i>Calotropis gigantea</i> (L.) R.Br. (Asclepiadaceae)	Jilledu, Nalla jilledu.	Arthritis	Milk sap	Milk sap is applied externally on the affected part twice daily for three days
			Scorpion sting	Milk sap	Milk sap is mixed into an equal quantity of mango resin and applied externally at the place of sting for two times a day
			Burning sole	Leaves	Heat leaves on fire and put them on the ground and ask the patient to step on these leaves for 15 minutes. Apply Sesame oil to sole before the stand on leaves.
45	<i>Canavalia virosa</i> (Roxb.) Wt.&Arn. (Fabaceae)	Thamma kaya.	Ring worm	Leave	Leaves extract is applied on the affected part once daily for three days.
46	<i>Canthium parviflorum</i> Lam.(Rub iaceae)	China balusu	Intestinal worms in children	Root	3 ml of root extract is given internally once in the morning as a single dose.
47	<i>Capparis zeylanica</i> L.(Capparid aceae)	Adonda	Stomach pain	Stem bark	10 ml of stem bark extract is given orally twice daily till cured
			Fever	Stem bark	Collect 5 g stem barks each of <i>Capparis zeylanica</i> , <i>Azadirachta indica</i> , <i>Zizyphus oenoplia</i> , <i>Ricinus communis</i> , <i>Cassia fistula</i> , <i>Albizia amara</i> to make a decoction in one liter of water. 20 ml of this decoction is given internally twice a day for two days.
			Diabetics	Ripe fruits	Ripe fruits are eaten twice in a day to control sugar level.
48	<i>Capsicum annum</i> L. (Solanaceae)	Mirapa, mirpakaya	BP control:		It regulates blood pressure to normal in low blood pressure patients (many rural folks)

Table 1 Contd.,

49	<i>Cardiospermum halicacabum</i> L.(Sapindaceae)	Buddakaakara teega, Patapata	Wounds:	Leave	Grind 50 g leaves along with 5 g <i>Cuminum cyminum</i> to make a paste and it is applied externally on affected part once a day for three days.
			Arthritis	Leaves	50 g leaves are decocted in 100 ml sesame oil and applied on affected part once daily till cured
50	<i>Careya arborea</i> Roxb. (Barringtoniaceae)	Dudippa	Stomach pain	Stem bark	10 ml of stem bark extract is given internally twice daily for 2 days to cure stomach pain due to intestinal worms or indigest
			Fever	Stem bark	10ml of leaf and stem bark decoction is given internally twice daily for 2 days.
51	<i>Carica papaya</i> L. (Caricaceae)	Bappayi	Scabies:	Latex	Apply latex on the affected part once daily till cured. (Many women in the district)
52	<i>Carum copticum</i> Benth.&Hook. (Apiaceae)	Oma	Stomach pain	Leaves	Chew 5g of <i>Carum copticum</i> for two times
			Fever		Ground 5 g each of <i>Carum copticum</i> , <i>Cuminum cyminum</i> , <i>Piper nigrum</i> , and <i>Zingiber officinalis</i> to make juice and 2 tea spoons are given daily in the morning and evening for two days.
53	<i>Cassia auriculata</i> L.(Caesalpiniaceae)	<i>Nela thangedu</i> , <i>Bathukamma pulu</i>	Diabetic	Stem powder	20 g of matured stem powder is given along with one glass of water once a day for a month
			Leucorrhoea	Flowers	Decoction of flowers (20 ml) is given internally to control white discharge during the menstrual time in women. (Many rural women)
55	<i>Cassia fistula</i> L. (Caesalpiniaceae)	Rela	Arthritis Stomach pain	Leave	Apply paste with made up of leaves externally during bedtime for 3-4 days.
			Fever	Stem barks	Collect 5g each stem barks of <i>Cassia fistula</i> , <i>Capparis zeylanica</i> , <i>Albizia amara</i> , <i>Azadirachta indica</i> , <i>Zizyphus oenoplia</i> and <i>Ricinus communis</i> . Dry them and make powder mix one tea spoonful of powder into 1 glass of water and boil it for 10minutes. Administer this decoction orally twice a daily for two days.
			Throat infection	Fruit	Decoction of fruit pulp is used to gargle to control throat infection
56	<i>Cassia occidentalis</i> L.(Caesalpiniaceae)	Kasintha,	Stomach pain	Root	50 ml root extract is mixed into 1 g powder of <i>Carum copticum</i> and it is given orally once daily till cured.
57	<i>Cassia tora</i> L. (Caesalpiniaceae)	Tagarisa, thydanta	Wounds	Leaves	Leaf paste is applied locally once daily for 3-4 days.
58	<i>Ceiba pentandra</i> (Linn) Gaertn.(Malvaceae)	Tella buruga	Impotency	Stem bark	10 ml of stem bark juice is given with goat milk every day during bedtime for a period of the month.

Table 1 Contd.,

59	<i>Celastrus paniculatus</i> Willd. (Celastraceae)	Jyothismathi	Arthritis	Seed	10 g seeds are crushed and boil it in 100 ml of sesame oil for 15 minutes and it is applied externally on the affected part once daily during bedtime till cured
60	<i>Celosia argentea</i> L. (Amaranthaceae)	Gunugu, Bathukamma puvvu	Scabies	Leaves	Leaf paste is applied locally twice daily till cured
			Night blindness	Leaves	Make chutney with fresh leaves and eaten twice in a week for two months.
61	<i>Centella asiatica</i> (Linn.) Urban. (Apiaceae)	Saraswati aku	Sun allergy	Leaves	Applied leaf juice externally on the affected part once daily for two days.
			Jaundice	Leaves	20 ml of leaf juice is given internally early in the morning once a day for 4-5 days.
62	<i>Cicer arietinum</i> L. (Fabaceae)	Senagalu, chanagalu	Immunity	Root	Sprouts are fried them with ghee and given to the patients along with root thrice a week for a month.
63	<i>Cissus vitiginea</i> L. (Vitaceae)	Kudidine, Golla diddi, Kurdandi,	Wounds:	Stem bark	Apply stem bark paste externally on affected part once daily till cured.
64	<i>Cissus quadrangularis</i> Linn. (Vitaceae)	Nalleda, nalleru, nallakada	Cold and	Tender shoots	10 ml tender shoots extract is given orally as a single dose.
			Cough Bone fracture	Fresh stem	Ground the fresh stem and mix with ghee and it is given orally a week to quickrecover from the fractured patient.
65	<i>Citrullus colocynthis</i> (L.) Schrad. (Cucurbitaceae)	Eetiputcha, Paparabundama, Verri pucha kaya	Jaundice	Root	5 g of root powder is mixed into 100 ml cow milk and it is given internally once a week for 3 weeks. Avoid eating chicken, mutton, and fish, etc.
67	<i>Cleistanthus collinus</i> (Roxb.) Bth. ex Hook. f. (Euphorbiaceae)	Billa godisa,	Fungus in fingers	Leave	Leaves paste is applied externally by adding little turmeric powder once daily for three days.
68	<i>Cleome gynandra</i> Linn. (Capparidaceae)	Thalati, vamiti	Ear ache:	Leave	Pour 2 -3 drop of leaf extract into the affected ear once daily for 2 days.
69	<i>Cleome viscosa</i> Linn. (Capparidaceae)	Thalati, vaviti	Headache:	Leave	Crushed leaves (which have removed juice) should be placed on head and tie with cloth for an hour, repeat it after 4 hours if necessary
70	<i>Clerodendrum multiflorum</i> (Burm. f.) O. Ktze. (Verbenaceae)	Thakkali chettu	Stomach pain	Leave	Grind handful leaves along with 5g of <i>Trachyspermum ammi</i> to make pills, 10g size pill is given internally twice a day for one day.
			Arthritis		Leaf paste is applied externally on the affected part once a day for two days
71	<i>Clerodendrum serratum</i> (Linn.) Moon (Verbenaceae)	Gantubharangi	Fever	Roots	Make decoction with 50 g roots along with 20 g of <i>Andrographis paniculata</i> , and 3 black pepper. A 20ml decoction is given internally twice daily for 3 days.
72	<i>Clitoria ternatea</i> Linn. (Fabaceae)	Shankhapushpi	Psoriasis	Leaf	Make root paste and applied along with leaf pulp of <i>Aloe vera</i> externally once daily for 3-4 weeks.

Table 1 Contd.,

73	<i>Coccinia grandis</i> (L.) Voigt (Cucurbitaceae)	Kakidonda, Adavidonda	Diabetics	Fruit	10 ml fruit juice is given internally once a week.
74	<i>Cocculus hirsutus</i> (L.) Diels (Menispermaceae)	Dusudu teega, Dusara teega, Telladusura	Venereal disease	Leave	20 ml leaf juice is given orally once a day for a month
			Leucorrhoea		Leaf juice is given by adding sugar internally once daily for 15 days.
			Red discharge		Grind handful leaves along with 10g of <b>crystalline suger</b> (misri) and it is given internally once a day for 15 days.
75	<i>Cochlospermum religiosum</i> (Linn.) Alston (Cochlospermaceae)	Konda gogu	Cough	Stem bark	Make a powder with stem barks of <i>Cochlospermum religiosum</i> and <i>Terminalia chebula</i> . Mix 2g powder into 100ml hot water. 100ml medicine is given internally once in the early morning for a week.
76	<i>Cocos nucifera</i> L. (Arecaceae)	Kobbari, tenkai	Dehydration	Fruit	500 ml of coconut water given twice daily for 2-3 days along with salt water.
77	<i>Cordia dichotoma</i> Forst. f.(Boraginaceae)	Chinna-nakkeru, Banka nakkeru, Iriki	Diarrhoea	Fruit	Semi burnt fruits are given internally for three times a day.
78	<i>Coriandrum sativum</i> L. (Apiaceae)	Dhaniyalu, kothmeera	Stomach pain	Leaves	Make chutney with leaves and eaten twice a day for easy digestion.
79	<i>Croton bonplandianum</i> Baill. (Euphorbiaceae)	Galivana alam	Sprains and Swellings	Leaves	Apply milk sap on the affected part once daily for 3-4 days.
80	<i>Cryptolepis buchananii</i> Roem.&Schult. (Asclepiadaceae)	Adavi pala teega	Arthritis:	Leaves	Make chutney with leaves of <i>Cryptolepis buchanani</i> and <i>Cissus quadrangularis</i> and given to eat like chutneytwice a week for 3-4 weeks.
81	<i>Cuminum cyminum</i> L.(Apiaceae)	Jeelakarra/ jeera	Fever	Leaves	Grind 5g each of <i>Cuminum cyminum</i> , <i>Carum copticum</i> , <i>Piper nigrum</i> and <i>Zingiber officinalis</i> altogether to make juice. Two tea spoons are given daily in the morning and evening for two days.
82	<i>Curculigo orchioides</i> Gaertn. (Hypoxidaceae)	Nela thadi	Impotency	Root	5 g roots powder is given internally along with 100ml goat milkonce daily during bedtime for 15 days.
83	<i>Curcuma longa</i> L. (Zingiberaceae)	Pasupu	Cold Cuts and	Rhizome	Rhizome paste is applied on the top of the head of child red through mixing castor oil twice a day for 3 days.
			Wounds		Rhizome paste is applied immediately on the place of cut to control bleeding.
84	<i>Cymbopogon martini</i> (Roxb.) Wets. (Poaceae)	Nimma gaddi, Kashy gaddi	Lice on head	Leaves	Grind the leaves of <i>Cymbopogon martini</i> and <i>Annona squamosa</i> together to make a paste and it is applied to the hair once daily for 2-3 days.
85	<i>Dalbergia paniculata</i> Roxb. (Fabaceae)	<i>Pachari</i> , <i>pacharugu</i>	Hair fall and dundraf	Stem bark	Stem bark paste is applied to the hair once in a week to control hair fall due to dandruff.

Table 1 Contd.,

86	<i>Datura metel</i> L. (Solanaceae)	Ummetha, Nalla ummetha	Arthritis	Leaves	Leaves paste is applied on the affected part once a day for 2 days
87	<i>Desmodium gangeticum</i> (L.) DC.(Fabaceae)	Deyyam jada	Fever	Root	Decocted 50g fresh roots along with 3 pepper in 200ml of water and 10ml of this decoction is given internally twice daily for 3- 4 days.
88	<i>Dioscorea bulbifera</i> L. (Dioscoreaceae)	Nela dumpa	Tumors	Tuber	Tuber paste is applied externally once daily for 3-4 days.
89	<i>Dioscorea pentaphylla</i> L.(Dioscoreaceae)	Genusugaddalu	Indigestion	Tuber	20ml tuber juice is given internally twice daily for 2 days.
90	<i>Dodonaea angustifolia</i> L.f., Suppal (Sapindaceae)		Sprains	Leaves	Rousted fresh tender leaves are placed on the affected part of the body once daily for 3-4 days.
91	<i>Dolichos lablab</i> L. ( Fabaceae)	Chikkudu	Ringworm	Leaves	Fresh leaf juice is applied externally on the affected part once daily for 3- 4 days.
92	<i>Eclipta prostrata</i> (L.) L.(Asteraceae)	Gunta galijeru, Gunta kalagaraaku	Stress relief	Leaves	Leaf paste are applied to the hair for one time only
			Anaemia		Make chutney with leaves and eaten along with rice once a week for 3-4 weeks
			Hair fall and white hair		Leaf paste is applied once a week to control white hair and hair fall.
93	<i>Eleusine coracana</i> (L.) Gaertn (Poaceae)	Thydaluru,ragulu	Tooth pain in children		100ml of grain flour is given internally daily for a month.
94	<i>Emblica officinalis</i> Gaertn. (Euphorbiaceae)	Usiri	Indigestion	Fruit powder	5g fruit powder is given internally after food for 2-3 times a day
			Burning sensation while urination		10g fruit powder is given with sugar internally morning and night until ured.
95	<i>Enicostemma axillare</i> (Lam.) Raynal (Gentianaceae)	Resika	Stomach pain	Whole plant	5ml plant extract is given along with 2 g of black pepper powder internally as a single dose.
96	<i>Euphorbia hirta</i> L. (Euphorbiaceae)	Palalam, Pacha botla	Conjunctivitis	Leaves	One or two drops of milk sap is applied to the affected eye once a day for three days
			Menstrual pains		20ml leaf juice is given internally once daily during the menstrual period.
			Scabies		Leaf juice is applied by mixing 1g of sulphor externally on the affected part of the body once daily 3-4 days.
97	<i>Euphorbia tirucalli</i> L. (Euphorbiaceae)	Piddakajameda, Manchi jemudu	Piles	Milk sap	Milk sap is mixed with turmeric powder and applied on the affected part once a day for a week to complete cure of pile in children.
98	<i>Feronia elephantum Correa.</i> (Rutaceae)	Velaga, velama	Diarrhoea:	Fruit	Young fruit pulp is given internally for one time only
99	<i>Ficus bengalensis</i> L.(Moraceae)	Marri	Impotency	Fruit	Handful of young leaf buds are shade dried and make powder and it is mixed into

Table 1 Contd.,					
100	<i>Ficus hispida</i> L. f. (Moraceae)	Brahma medi,	Mad dog bite (Verri kukka katu)	Fruit	20ml fruit juice is given internally once daily for two days.
101	<i>Ficus religiosa</i> L. (Moraceae)	Ravi chettu	Impotency	Fruit	5g fruits powder is given along with cow milk daily once for a month
			Skin diseases	Stem bark	Stem bark paste is applied on the affected part once daily till cured
102	<i>Gardenia gummifera</i> L. (Rubiaceae)	:Chit-mit	Stomach pain	Stem bark	5ml of stem bark juice is given orally once to cure stomach pain
103	<i>Gloriosa superba</i> L.(Liliaceae)	Venkayya puvvu, Nabhi pulu	Swellings:	Corn	Corn paste is applied externally on the affected part once a day for three days
104	<i>Gmelina arborea</i> Roxb. (Verbenaceae)	Gummudu Pedda gummudu.	Back pain	Root	10 ml root extract is given internally once a day for a week.
105	<i>Gymnema sylvestre</i> (Retz.) R. B (Asclepiadaceae)		Diabetic	Leaves	10ml leaf decoction is given internally early in the morning for 30 days
106	<i>Haldinia cordifolia</i> (Roxb.) Ridsdale (Rubiaceae)	Bandaru	Dysentery	Stem bark	20ml stem bark juice is given internally twice daily till cured
107	<i>Helicteres isora</i> L.(Sterculiaceae)	Nuli thada	Scabies	Fruit	Sundry the fruits to make powder. Apply powder by mixing coconut oil externally on the affected part once daily till cured.
109	<i>Heliotropium indicum</i> Linn. (Boraginaceae)	Thelu kondi, Naga danthi	Scorpion sting	Leaves	Leaf juice is applied externally on the affected part once daily for 3 days.
110	<i>Hemidesmus indicus</i> (L.) Schult	Sugandi pala	Weakness	Stem	One tea spoonful of powder is mixed in a cup of tea and it is given to drink daily for a month.
111	<i>Hibiscus rosa- sinensis</i> L. (Malvaceae)	Mandara	Control Hair fall	Leaves	Fry handful petals and soak them in 100ml coconut oil and it is applied to the hair every day.
			Dandruff		Flowers are boiled in coconut oil for 15 minutes and cooled, apply this oil to the hair once daily to control dandruff
112	<i>Holarrhena pubescens</i> (Buch.- Ham.) Wall. Ex G. Don(Apocyanaceae)	Nallapalagodisa	Cuts and wounds	Milk sap	Milk sap is applied externally on the portion of the cut or wound to control bleeding and apply fresh turmeric paste in case of small cuts.
113	<i>Holoptelea integrifolia</i> (Roxb.) Planch.(Ulmaceae)	Nemalinara, nemalichettu	Arthritis:	Stem bark	Make stem bark paste and boil with sesame oil for 30 min and apply externally when it is lukewarm once daily till cured.
114	<i>Holostemma ada- kodien</i> Schultes (Asclepiadaceae)	Adavi palateega	Sprains	Latex	Applied latex externally on affected part, once-daily till cured.
			Wounds:	Leaves	Applied leaf paste externally on wounds once daily till cured
115	<i>Jatropha curcas</i> L. (Euphorbiaceae)	Adavi- amudamu, Nepalam	Cuts	Leaves	Make leaf paste and applied externally on cuts to control bleeding.

Table 1 Contd.,

116	<i>Jatropha gossypifolia</i> L.( <i>Euphorbiaceae</i> )	Chitti nepalam	Scabies	Leaves	Leaf paste is applied externally on the affected part once daily till cured.
117	<i>Justicia adathoda</i> L.( <i>Acanthaceae</i> )	Addasaram	Cough	Leaves	: 100ml leaf decoction is given along with honey internally morning and evening to get relief from cough.
118	<i>Justicia procumbens</i> L ( <i>Acanthaceae</i> )	Papadaku	Arthritis:	Whole plant	20 g of the whole plant is ground and boil it in 100ml of coconut oil for five minutes and apply externally on the affected part till cured
119	<i>Lagerstroemia parviflora</i> Roxb. ( <i>Lythraceae</i> )	Chennangi	Cracked sole	Leaves	Apply leaf paste on the affected part once in the night before sleep till cured
120	<i>Lannea coromandelica</i> (Hout t.) Merr. ( <i>Anacardiaceae</i> )	Gumphena	Dysentery	Stem bark	10ml stem bark juice is given internally once daily for 2-3 days
121	<i>Lantana camara</i> L. ( <i>Verbenaceae</i> )	Murikimalle	Cuts and wounds:	Leaves	Grind handful leaves with turmeri and it is applied externally twice daily 2-3 days.
122	<i>Lawsonia inermis</i> L. ( <i>Lythraceae</i> )	Mydaku, gorintaku	Arthritis:	Stem bark	Make a paste out of stem bark and apply this paste externally once daily for two weeks.
123	<i>Lawsonia inermis</i> L. ( <i>Lythraceae</i> )	Mydaku, gorintaku	Arthritis:	Stem bark	Make a paste out of stem bark and apply this paste externally once daily for two weeks.
124	<i>Leonotis nepetiifolia</i> (L.) R. Br.( <i>Lamiaceae</i> )	Rana bheri	Skin allergy	Root	Apply root paste on affected part once a day for three days.
125	<i>Leucas aspera</i> (Willd.) Link ( <i>Lamiaceae</i> )	Thummi	Abdominal pain	Whole plant	Whole plant is boiled into 500ml water for 5 minutes. 20ml of this filtered decoction is given for one time
			Psoriasis	Leaves	Leaf juice is boiled in coconut oil and it is applied externally on the affected part once daily till cured
126	<i>Tamarindus indica</i> L. ( <i>Caesalpiaceae</i> )	Chintha chettu	Cracked sole	Fruit	Fruit pulp is applied externally on affected part once daily till cured
127	<i>Terminalia arjuna</i> (Roxb. ex D. C.)Wt. & Arn. ( <i>Combretaceae</i> )	Etimaddi, Eru maddi, Tella maddi	Anaemic	Stem bark	1 tea spoon powder is given with one glass of water or cow/goat milk for three months
			Cardiac tonic		Stem bark extract is given daily to strengthening the hart functions as a cardiac tonic.
125	<i>Terminalia bellerica</i> (Gaertn)Roxb. ( <i>Combretaceae</i> )	Thani, thade, tandra	Stomach pain:	Seed	One tea spoonful seed powder is given with sugar or honey thrice a day for two days
126	<i>Terminalia chebula</i> Retz. ( <i>Combretaceae</i> )	Karaka chettu,	Dry cough	Fruit	One tea spoonful fruit powder of <i>Terminalia chebula</i> is given twice daily for three days.

Table 1 Contd.,					
127	<i>Tribulus terrestris</i> L., ( <i>Zygophyllaceae</i> )	Palleru	Impotency	Seed	Ground 10g seeds with 10g dry roots of <i>Withania somnifera</i> to make powder. One tea spoonful powder is given internally daily with milk during bedtime for 30 days.
128	<i>Tribulus terrestris</i> L., ( <i>Zygophyllaceae</i> )	Palleru	Impotency:	Seed	Ground 10g seeds with 10g dry roots of <i>Withania somnifera</i> to make powder. One tea spoonful powder is given internally daily with milk during bedtime for 30 days.
129	<i>Tridax procumbens</i> .(Compo sitae)	Gayamkura, Belapaku, Nalla alam	Fresh cuts	Seed	Seed paste is applied along with turmeric powder twice daily for 3-4 days.
130	<i>Trigonella foenum- graecum</i> L.(Fabaceae )		<i>Diarrhoea</i>	Seed	5g Seeds are chewed to cure diarrhoea twice daily for two days.
131	<i>Tylophora indica</i> (Burm.f.) Merrill ( <i>Asclepiadaceae</i> )	Meka meyani teega	Venereal disease	Seed	Ground 7 leaves along with 7 fruits of black pepper to make a pill. 5 g size of the pill is given orally once a day for 5 days.
132	<i>Vitex negundo</i> L. ( <i>Verbenaceae</i> )	Vayilaku	Paralysis	Leaves	Ground 50g leaves along with 2g of <i>Piper nigrum</i> , one fruit of <i>Woodfordia fruticosa</i> , and 7leaves of <i>Piper betle</i> and make a bolus. 20 g bolus is given in the morning of every alternative day. Avoid eating fish during medication
			Arthritis		Leaves paste is applied externally once daily till cured.
133	<i>Wattakaka volubilis</i> (L. f.) Stapf. ( <i>Asclepiadaceae</i> )	Bandi guriya	Swellings:	Leaves	Leaves are decocted with water and applied externally on the affected part when it is slightly warm.
			Arthritis:		50 ml leaves decoction is given orally once daily for 30 days.
134	<i>Withania somnifera</i> (L.) Dunal ( <i>Solanaceae</i> )	Aswagandha, Panneru gadda, Dommadolu gadda	Impotency	Root	20g root powder is given with one glass of cow milk before sleep at night daily for 30 days.
			Back ache and muscular pains		10 g root powder is given with honey once daily for 15 days
			Fitness		10 g root powder is given with goat milk daily for two weeks
			Tumors		Apply castor oil to the green leaves and heat them on fire and placed them on the affected part once daily for 3-4 days
			Obesity		Roots are fried with ghee and given to the patient for 30 days.



Table 1 Contd.,					
135	<i>Woodfordia fruticosa</i> (L.) Kurz(Lythraceae)	Jaji Jajuki vayila,	Gastrouble	Flower	10 ml of flower juice is given internally once daily for two days.
			Paralysi	Fruit	Ground 1 fruit along with 50g leaves of <i>Vitex negundo</i> , 2g of <i>Piper nigrum</i> , and 7 leaves of <i>Piper betle</i> to make a bolus. 20 g bolus is given in the morning of every alternative day for a month. Fish meat is avoided during the course of treatment
136	<i>Wrightia tinctoria</i> Br.(Apocynaceae)	Ankudu, Tellapala kodise	Psoriasis:	Leaves	Leaves are decocted with coconut oil and applied externally once daily till cured
137	<i>Zingiber officinalis</i> Rosc.(Zingiberaceae)	Allamu, Sonti (dried ginger)	Cough:	Rhizome	5ml extract of fresh rhizome is given internally in the early morning for 3 days
			Sexually transmitted disease		1 g rhizome is decocted along with 2 g of <i>Piper nigrum</i> 10g root bark of <i>Plumbago zeylanica</i> , 1 seed of <i>Semecarpus anacardium</i> in half liter water, 20 ml decoction is given internally by adding tea spoonful of cow ghee once daily for 3 days.
138	<i>Zizyphus oenoplia</i> (Linn.) Mil (Rhamnaceae)	: Pariki	Fever	Stem bark	Crush 5 g stem bark with equal quantity stem barks of <i>Albizia amara</i> , <i>Azadirachta indica</i> , <i>Capparis zeylanica</i> , <i>Ricinus communis</i> , and <i>Cassia fistula</i> and boiled in 100ml water for 15 minutes. 20 ml is given orally twice daily for two days.

## DISCUSSIONS

The present study deals with the documentation and evaluation of medicinal plants used by the tribal people in the primary health care in and around Vikarabad and Dharur mandals of Vikarabad Dist, T.S. About 40 villages have been chosen for the study and yielded a valuable knowledge of plant medicine of the locals. The herbal remedies mentioned are of certain general and specific ailments, such as snake bite, cough, and scorpion sting, headache, back pain body pains, colds, dandruff, dog bite, fever, hair loss, jaundice, inflammation, joint pains, lice killer, skin ailments, ear pains, eye problems, red and white discharge in women, loss of semen in urine in men, toothache and gum problems, stomach ache, bone fractures, conception and menstrual problems and wound healing. The resource persons are mostly lambdas, chenchus and some elderly people of local villages. The people practice and cure almost all ailments or diseases or wounds very effectively with simple locally available plants without involving much financial commitment, in the majority of the cases they treat freely. The study started in the month of May 2016 and went on up to May 2018. It revealed valuable information about the ethnomedicine of the local tribal of this Dist. It is invaluable and has immense potential for the primary health care of the people in this area. About 138 plant species of 36 families have been documented in this study and an itinerary is prepared according to the alphabetical order of the diseases, families along with the vernacular names, botanical; names, drug formulation of drug formulation and methods of drug administration as told by the herbal practitioners. The Practitioners also felt that of late their practice is dwindling due to non-availability of plants which were

plenty till recently, due to loss of habitat and forest cover in this area. The method of herbal practice is also decreasing as the practitioners are not passing the knowledge to the next generations before their death and also due to lack of proper written documentation. They felt that proper documentation of the knowledge of herbal practitioners should be taken up immediately in all the areas of the Dist before it disappears and conservation of medicinal plants in the area is very much in need. The present study elicits the importance of local herbal practices and availability of medicinal plants in the area, which will help in self-sufficiency for their primary health care practices. Though this is a small inventory which helped in identifying the gravity of the situation of loss of medicinal biodiversity of the area and subsequently non-availability of the treatment by the herbal practitioners to the local poor people of the area, unless otherwise the conservation and afforestation practices are taken. The present type of survey documentation must be continued involving many more villages and traditional practitioners so that we can have a concrete picture of the richness of the medicinal flora and as well as the availability of folklore medicinal treatment to the local people.

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# An Ethnobotanical Survey of Some Medicinal Plants used by Traditional Healers of Adilabad Dist, Telangana State

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## Abstract

The history of medicinal plants is as old as history of civilization, world over. The relevance of local herbal health traditions has not diminished despite the giant strides made in the field of modern medicine. India, a mega diverse nation, is one of the richest nations in terms of biological diversity. India owes this to its position in the tropical and subtropical latitudes. The traditional medicine industry in India mostly belongs to the small-scale category, in ethnobotanical studies, the major contribution has been in the field of medicine. A large number of ethnomedicinal information remained endemic to certain regions or people due to lack of communication. In recent the premier industrial houses have also entered the field of manufacture of ayurvedic and herbal products. In fact, modern or western medicine too is the beneficiary of herbal traditions in as much as 25% of the drugs of this class are plant-based. The major families which occupied first, and second position were Mimosaceae-12sp Euphorbiaceae-9sp, and all 149 plant species belonging to 57 families were documented and authentically identified. This bespeaks not only of the economic potential but also the sustained relevance of traditional medical science in modern times. The main aim of the survey is to prepare a ready check-list of medicinal plants present at and around Adilabad hills used by local herbalists and village folklore to cure various human and cattle ailments.

## Keywords

Ethnobotanical survey, Medicinal Plants Traditional Healers, Adilabad Dist, Telangana.

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## INTRODUCTION

Documentation of Ethno- botanical studies of any area have attained importance due to fast depletion of folklore knowledge and their uses because of modern life styles. The present use of modern medicine is leading to various illnesses of unknown nature in human beings. The dominant Allopathic

systems of Medicine though providing treatment quickly to many diseases but also cause deleterious side effects on human body. All these factors are forcing the man to look for alternative sources more ultimately the plant origin. The usefulness and efficacy of the plants as curative agents of many human diseases is long known. Traditionally, the

knowledge of plants as source of medicines for different diseases is well known through traditional medicinal systems like Ayurveda, Siddha, Unani, Homeopathy, Chinese's and Tibetan medicine.

The vast tracts of Indian sub-continent and its rich flora and fauna are still to be explored. The people living in the forests and its vicinity and tribal's are using many plants for their several health problems. These people living away from the modern society and lack of proper health care facilities are still depending on their native medical practices for the primary health care.

The importance of traditional system of medicine has now been recognized all over the world. The traditional medicinal practices have become the integral part of social culture, particularly in the countries of third world. Ethno-botanical information plays an important role in scientific evaluation, efficacy and active principles of the medicinal plants. Early man on this earth would have hunted in the jungle for plants and animals to meet with his hunger, and search for some materials like skin, bark or foliage to protect him from rigorous of weather. The term Ethnobotany was first coined by John William Harshberger in 1895. The term Ethnobotany has often been considered synonymous with traditional medicine or with economic value of the plants, in other words, Ethnobotany can also be defined as the study of total natural and traditional interrelationships between man and plants as well as animals. Initial studies on Ethnobotany in the world in the last 75 years have been primarily devoted to the preparation of inventories of plants of certain regions or specific ethnic groups. Many scientists, naturalists and thinkers from outside the community of Ethnobotanists started emphasizing the importance of Ethnobotanical inquiries and explorations. Faulks (1958) wrote the first book on Ethnobotany entitled "An introduction to Ethnobotany". Subsequently Jain (1981) published a book with the title of "Glimpses of Indian Ethnobotany" and it is a compilation of various Ethnobotanically related articles of different phytogeographical areas and tribes of India. The present study deals with Traditional medicinal plants existing in the district of Adilabad district related with the traditional medicinal practices of local tribal and folklore community, Gondi, Kolams Naikpod, Golla, Kurma, Lambada, Chenchu and other village heads and local practitioners. The work is aimed at documentation, availability, utility and methodology of drug preparation by these communities in the fields of primary healthcare of human being as well as veterinary health practices. As of today, there is

no proper scientific documentation of healing practices of these communities. To record the traditional medicinal practices of the folklore and Tribes community of Adilabad district and the potentiality of TRADITIONAL BOTANICAL KNOWLEDGE: of the local people. 1. Botanical identification and herbarium preparation of the plants used by them. The plants which are in use for curing the diseases by them, for different ailments. 2. To record the methodology followed by them in diagnosis during administration and curing of the diseases. 3. Publication of the scientific data in the form of documentation for future scientific studies. To record the botanical identification, which is the sheet anchor for the scientific documentation of traditional knowledge,

#### ENUMERATIONS

In the enumeration, the family and taxons are arranged alphabetically. Ethnobotanical uses of some medicinal plant parts used by tribes for some diseases:

- *Abrus precatorius* Linn. (**Fabaceae**) Root powder is taken orally along with cow's milk to treatorpion sting and snakebite.
- *Abutilon indicum* L. (**Malvaceae**) Leaf juice and root are taken orally to treat dental problems.
- *Abutilon indium* (L.) Sweet. (**Fabaceae**) Leaf paste is applied over the spot of scorpion sting.
- *Acacia catechu* (L.f.) Willd. (**Fabaceae**) The stem bark of *Acacia catechu* and tips of *Holoptela integrifolia* are ground to paste and applied on the wounds for eight days.
- *Acacia chundra* (Roxb. Ex Rottl.) Willd. (**Mimosaceae**) Stem bark extract (1 tablespoonful) is administered with goat milk for 4 days, with a day gap after every dose for asthma. Bark is kept in the home for get rid of fear (Evil spirit).
- *Acacia farnesiana* (L.) Willd. (**Mimosaceae**) Fruit powder is given orally with milk for dogbite.
- *Acacia leucophloea* (Roxb.) Willd (**Mimosaceae**) Paste of fresh stem bark is applied topically to treat cuts and wounds.
- *Acacia nilotica* (L.) Del (**Fabaceae**) Dried stem bark powder mixed with camphor and ghee applied on wounds.
- *Acacia nilotica* (L.) Willd. Ex Del. (**Mimosaceae**) Bark powder is applied along with oil for burns.
- *Acacia pennata* (L) Willd. (**Mimosaceae**) Stem bark along with that of *Semecarpus anacardium* (each 100 g) are pound and the extract is given orally for 3 days for fits (Somma, Murcha)

- *Acalypha indica* L. (**Euphorbiaceae**) Leaves with salt and turmeric are ground to powder and mixed with sesame oil, applied on the patches of ring worm infection. Leaf paste is applied topically to treat skin diseases.
- *Achyranthes aspera* L (**Amaranthaceae**) Leaf paste is applied topically to treat cuts and Wounds.
- *Acorus calamus* L.(**Araceae**) Dried rhizome is ground in water and the paste is given orally to children for clarity of speech.
- *Adhatoda vasica* Nees (**Acanthaceae**) Leaves are ground with the flowers of *Hibiscus rosa-sinensis* and taken orally to treat asthma
- *Aegle marmelos* Corr.ex.Roxb (**Rutaceae**) Leaf paste is applied topically to heal wounds. The pulp of fruit is given with water to children suffering with dysentery.
- *Aerva lanata* (L.) Juss. Ex Schult (**Amaranthaceae**) Juice of whole plant is taken orally to treat cough, sore throat and wounds. Leaf juice is instilled in ears.
- *Alangium salvifolium* (L.f.) Wang (**Alangiaceae**) Fruits are eaten for loss of appetite for Anorexia. Stem bark extract and leaf paste are applied as plaster for bone fracture.
- *Aloe vera* L. (**Liliaceae**) Sap mixed with oil is heated and the mixture is applied on hair for hair growth and good sleep.
- *Ampelocissus latifolia* (Roxb.) Planch (**Vitaceae**) 200 ml of stem juice is administered orally once a day for 2 days for Anorexia
- *Andrographis paniculata* (Burm.f.) (**Acanthaceae**) Wallich ex Leaf paste is applied topically at the bitten site of snake; beetle and scorpion. Powdered leaf is mixed with cow or goat's milk and taken orally to treat diabetes.
- *Anodendron paniculatum* (Roxb.) DC. (**Apocynaceae**) Bark extract is bandaged for bone fracture.
- *Anogeissus latifolia* (Roxb. Ex DC.) Wall. Ex Guill. & Perr. (**Combretaceae**) Bark extract (4 tea spoons) along with pepper (2 tea spoons) is given twice a day for 10 to 15 days for asthma
- *Asparagus gonoclados* Baker (**Liliaceae**) Tuber is eaten for fertility.
- *Asystasia gangetica* (L.) T.Anderson (**Acanthaceae**) Leaf powder is mixed with coconut oil and applied topically to healwounds (burns).
- *Azadirachta indica* A. Juss. (**Meliaceae**) Leaf paste is applied topically on the body to treat small pox, rheumatism and skin diseases. The young twigs are used as toothbrush to develop strong teeth.
- *Blumea mollis* (D.Don) Merr.(**Asteraceae**) Leaf smoke is inhaled for cough.
- *Boerhaavia diffusa* L.(**Nyctaginaceae**) Root paste is applied topically to treat hydrocele.
- *Bombax ceiba* L. (**Bombacaceae**) Bark extract is given orally to increase sperm count.
- *Boswellia serrata* Coleb (**Burseraceae**) Gum is applied over the bitten area for dog bite.
- *Buchanania lanzan* Spreng. (**Anacardiaceae**) Gum and rice are pounded and the powder is administered for 3 or 4 days for chest pain.
- *Calotropis gigantean* (L.) R. Br. (**Asclepiadaceae**) Latex drops (3 or 5) mixed with sesame oil (2 spoons) are instilled in ears (2 or 3 drops).
- *Canavalia virosa* (Roxb.) Wt. & Arn. (**Convolvulaceae**) Leaves extract is applied on the affected part once daily for three days for ring worm.
- *Capparis sepiaria* L. (**Capparaceae**) Bark and neem bark (1:4) are crushed and the extract is given orally for 2 days after menstruation for contraceptive.
- *Capparis zeylanica* L. (**Capparaceae**) Root bark is ground with water, boiled and taken orally to treat indigestion and also roots made into an amulet; it is believed to infuse occult powers (Evil spirit).
- *Caralluma umbellata* Roxb. (**Asclepiadaceae**) Pulp of the young plants is applied over the burned parts.
- *Cardiospermum halicacabum* L. (**Sapindaceae**) Root is boiled with oil and applied on head before bath to treat throat infection and headache.
- *Careya arborea* Roxb. (**Lecythidaceae**) Infusion of flowers is given after childbirth to heal ruptures.
- *Cassia absus* L. (**Caesalpiaceae**) Seeds are ground into paste and applied topically to treat skin diseases and headache.
- *Cassia auriculata* L. (**Caesalpiaceae**) Flowers are crushed and mixed with goat's milk and taken orally to prevent white discharge in women and seed powder with honey is taken orally for diabetes.
- *Cassia occidentalis* L. (**Caesalpiaceae**) Leaf paste is applied topically to treat scabies and to heal bone fractures.
- *Cassine glauca* (Roxb.) O. Kuntze (**Celastraceae**) Roots tied to wrist to keep-off evil spirits.

- *Catharanthus roseus* G. Don. (**Apocynaceae**) Whole plant is powdered and mixed with cow's milk and taken orally to treat diabetes.
- *Ceriscoides turgid* (Roxb.) Tirveng. (**Rubiaceae**) Bark juice is administered for diarrhea
- *Chamaesyce hirta* (L.) Small (**Euphorbiaceae**) Whole plant is pounded with salt and turmeric and applied as cream for boils, blisters & cuts.
- *Chomelia asiatica* (L.) Kuntze. (**Rubiaceae**) Root juice along with garlic is instilled in nose for fits (Somma, Murcha).
- *Cinnamomum verum* Presl. (**Lauraceae**) Decoction of stem bark is taken internally to treat cough, dysentery and to keep the body cool.
- *Cissus quadrangularis* L (**Vitaceae**) Paste of stem is taken orally for easy digestion. Tender internodes and leaves are pickled and eaten for Anorexia.
- *Citrus aurantifolia* (Christm.) Swingle. L. (**Rutaceae**) Decoction of leaves is inhaled to get relief from fever, headache and cold.
- *Cleome viscosa* L. (**Capparaceae**) Leaf paste is applied topically to heal wounds.
- *Clerodendrum inerme* (L.) (**Verbenaceae**) Leaf is ground in water and the juice is taken orally to treat fever.
- *Clitoria ternatea* L. (**Fabaceae**) Root powder is mixed with water and taken orally to treat indigestion, eye diseases and headache.
- *Coccinia grandis* (L.) J. Voigt (**Cucurbitaceae**) Leaf Juice is mixed with butter and applied topically to treat skin diseases. Leaf paste is applied to cuts and wounds
- *Coldenia procumbens* L. (**Boraginaceae**) Juice of leaf is taken orally to prevent white discharge in women.
- *Coleus aromaticus* Benth (**Lamiaceae**) Leaf juice is taken orally by children to treat indigestion and cough.
- *Costus speciosus* (Koenig) Smith (**Zingiberaceae**) Rhizomes are pound and 1 teaspoonful of juice is taken orally by tribals for abortion.
- *Curculigo orchioides* Gaertn (**Hypoxidaceae**) Tubers are dried and powdered and one teaspoonful is taken orally with milk one every day for aphrodisiac.
- *Cynodon dactylon* L. Pers. (**Poaceae**) Decoction of whole plant is taken orally to keep the body cool.
- *Cyperus rotundus* L. (**Cyperaceae**) Paste of dried tuber is applied on breast of women to secrete more milk and applied topically on bitten site of scorpion
- *Datura metel* L. (**Solanaceae**) Few drops of leaf juice is poured into ear to treat earache.
- *Dichrostachys cinerea* Wight & Arn. (**Mimosaceae**) Leaf paste is applied to cuts.
- *Dillenia pentagyna* Roxb (**Dilleniaceae**) Stem bark pounded with ginger and peppers are applied as bandage.
- *Diospyros peregrine* (Gaertn.) (**Ebenaceae**) Bark extract is taken orally for asthma
- *Dodonaea viscosa* (L.) Jacq. (**Sapindaceae**) Leaves pounded with turmeric are bandaged over the affected part of bone fracture.
- *Drypetes roxburghi* (Wall.) Hurusawa (**Euphorbiaceae**) Bark extract is given orally for cough.
- *Eclipta prostrata* L (**Asteraceae**) Leaf powder is mixed with coconut oil & applied on the hair regularly for healthy and black hair.
- *Enicostemma axillare* (Lam.) Royle (**Gentianaceae**) Whole plant is pounded and applied to boils.
- *Euphorbia antiquorum* Linn (**Euphorbiaceae**) Dried latex is taken internally in low dose to help free motion.
- *Euphorbia hirta* L. (**Euphorbiaceae**) The milky latex is applied topically to treat wounds and lip cracks.
- *Euphorbia tirucalli* L. (**Euphorbiaceae**) The stem is boiled with water and given to children to treat skin diseases.
- *Ficus benghalensis* L. (**Mimosaceae**) Stem latex is applied topically on heel cracks. Young stem is used as tooth brush.
- *Ficus racemosa* L. (**Mimosaceae**) Stem latex is applied topically to treat heel cracks.
- *Ficus religiosa* L. (**Mimosaceae**) Leaf powder is mixed with water and taken orally to get relief from body pain.
- *Flacourtia indica* (Burm.f.) Merr. (**Flacourtiaceae**) Bark juice is boiled in gingly oil and the worm extract is applied to cuts.
- *Gloriosa superba* L. (**Liliaceae**) Bulb are pounded with garlic in goat milk given in early pregnancy
- *Grewia hirsute* Vahl (**Tiliaceae**) Roots are pounded and applied over for boils, blisters & cuts.
- *Gymnema sylvestre* R. Br. (**Asclepiadaceae**) Leaf powder is mixed with cow's milk and taken orally to treat diabetes. The root powder is taken orally and also applied on the bitten spot to treat snake bite.

- *Heliotropium indicum* L. (**Boraginaceae**) Paste of whole plant is applied topically to treat wounds and skin affections.
- *Hemidesmus indicus* Linn. R. Br. Muell. (**Asclepiadaceae**) Juice extracted from the whole plant is taken internally to keep the body cool. Root juice is given orally for blood purifier.
- *Hibiscus rosa-sinensis* L. (**Malvaceae**) Paste of fresh leaves is applied on the hair for healthy and black hair.
- *Holarrhena pubescens* (Buch. Ham.) Wall. Ex Don (**Asclepiadaceae**) A pinch of bark is placed in the mouth to relieve cough.
- *Holoptelia integrifolia* (Roxb.) Planch (**Ulmaceae**) Bark juice (1/2 glass) is given twice a day for a week.
- *Hybanthus enneaspermus* (L) Muell (**Violaceae**) Paste of whole plant is applied topically to treat cough. Whole plant dried and powdered. One teaspoonful is taken orally with milk every day twice for Aphrodisiac.
- *Hymenodictyon orixense* (Roxb.) Mabb. (**Rubiaceae**) Bark juice is bandaged for bone fracture.
- *Lannea coromandelica* (Houtt.) Merr. (**Anacardiaceae**) Stem bark pounded with turmeric are bandaged over the affected part.
- *Lantana camara* L. (**Verbenaceae**) A handful of flower is ground with coconut oil and applied topically on the head to get relief from headache.
- *Lawsonia inermis* L. (**Lythraceae**) Leaf powder is mixed with coconut oil and applied topically to treat cuts and wounds.
- *Lepidagathis cristata* Willd (**Acanthaceae**) Presence of one plant in home in every Sunday is good for health.
- *Leucas aspera* (Willd.) Link. (**Lamiaceae**) A bunch of leaves is boiled and the vapour is inhaled to cure head ache and fever.
- *Lippia nodiflora* Michx.: (**Verbenaceae**) Paste of leaves is applied topically to treat swellings and wounds.
- *Litsea glutinosa* (Lour.) C.B. Robins (**Lauraceae**) Bark juice is taken orally for maternal pain.
- *Mangifera indica* L. (**Anacardiaceae**) The latex from leaf and stem bark is used to treat heel cracks.
- *Melochia corchorifolia* L. (**Sterculiaceae**) Boiled leaf is taken as food to help in free motion.
- *Merremia emarginata* (Burm.f.) Hall.f. (**Convolvulaceae**) Decoction of the whole plant is taken internally to treat stomach problems.
- *Mimosa hamata* Willd. (**Mimosaceae**) Bark extract pound in cows' milks along with garlic is advised to men thrice a day for 3 days for increase in potency.
- *Mimosa pudica* L. (**Mimosaceae**) Leaf paste is applied topically to treat cuts and wounds. Root extract (2 spoons) given once a day for two days for diarrhoea.
- *Morinda tinctoria* Roxb. (**Rubiaceae**) Leaf juice is given orally to children before food for easy digestion.
- *Moringa concanensis* Nimmo ex Dalz. & Gibs. (**Moringaceae**) Stem bark extract (2 spoonfuls) is administered with sugar for 4 days for cough.
- *Moringa oleifera* Lam. (**Moringaceae**) The leaf is taken as food and it reduces body heat and to treat indigestion and eye diseases. Flower is taken as food and it gives chillness to eyes and increases sperm production in men.
- *Mukia maderaspatana* (L.) M. Roemer (**Cucurbitaceae**) Leaf powder is mixed with boiled rice and taken orally to treat cold and cough.
- *Murraya koenigii* (L.) Sprengel (**Rutaceae**) Juice of tender leaves is taken orally to arrest vomiting.
- *Nerium oleander* Sol. (**Apocynaceae**) Juice prepared from the stem bark is boiled with gingelly oil and two drops are poured into ear to treat ear pain.
- *Ocimum sanctum* L. (**Lamiaceae**) Tulsi Leaves are crushed with onion bulbs and the juice is taken orally to treat cough, cold and headache.
- *Odina wodier* Roxb. Fl. (**Anacardiaceae**) Juice of leaves is taken orally to prevent white discharge in women.
- *Oldenlandia umbellata* L. (**Rubiaceae**) The root paste is applied topically to arrest bleeding.
- *Phyllanthus amarus* Schum. & Thnn. (**Euphorbiaceae**) Fresh leaves are ground and mixed with a cup of cow or goat's milk and taken internally to cure jaundice.
- *Phyllanthus emblica* L. (**Euphorbiaceae**) Fruit powder is mixed with cow's or goat's milk and taken orally to treat cold and cough.
- *Plumbago zeylanica* L. (**Plumbaginaceae**) Root pound with garlic in milk is given to children for fits (Somma, Murcha).

- *Polyalthia longifolia* (Sonn.) Thwaites. (**Annonaceae**) Juice extracted from the fresh stem bark is taken orally to treat indigestion.
- *Pongamia pinnata* (L.) Pierre. (**Fabaceae**) Juice of root is mixed with equal amount of coconut milk, boiled and applied topically to cure wound and gastric trouble.
- *Rauwolfia tetraphylla* Linn. (**Apocynaceae**) Paste of the whole plant is mixed with castor oil and applied pically to treat skin diseases.
- *Ricinus communis* L. (**Euphorbiaceae**) The leaf juice is taken orally, or washed leaves are tied on the breast to increase secretion of milk in women. The oil prepared from the seeds is applied on lower stomach to get relief from stomachache
- *Sanservieria roxburghiana* Schult. (**Liliaceae**) Juice of warmed leaf is poured into ear to treat ear pain.
- *Sarcostemma acidum* (Roxb.) Voigt. (**Periplocaceae**) Columns grounded in goat milk and put as band for bone fracture.
- *Schlelichera oleosa* (Lour.) Oken: (**Sapindaceae**) Stem bark extract is applied over the chest twice a day till relieved of pain.
- *Scleria corymbosa* Roxb. (**Cyperaceae**) Root juice is given orally for blood purifier.
- *Semecarpus anacardium* L. (**Anacardiaceae**) Seed resin is applied over dogbite.
- *Sida acuta* Burn. (**Malvaceae**) Arival manai poondu Leaf paste is applied topically to heal cuts, wounds and to get relief from headache.
- *Smilaxperfoliata* Lour (**Liliaceae**) One tea spoonful juice of tubersis taken orally before sleeping.
- *Solanum nigrum* L (**Solanaceae**) Whole plant parts are taken as food to treat cough.
- *Solanum surattense* Burm.f (**Solanaceae**) Root extract (1 tablespoon) is given orally after 3 days of menstruation for 5 or 6 days for fertility.
- *Solanum torvum* Sw. (**Solanaceae**) Leaf juice is taken orally to reduce body heat.
- *Solanum trilobatum* L. (**Solanaceae**) Unripe fruits are prepared as curry or roasted in gingelly oil and taken orally along with food to strengthen the body. The leaf juice is taken orally to treat cough and itching.
- *Spermacoce hispida* L (**Rubiaceae**) The seeds are crushed into paste and taken orally to treat stomach problems.
- *Sphaeranthus indicus* L. (**Asteraceae**) Leaf, flower and seeds are ground into paste and applied topically to treat skin diseases and piles.
- *Stachytarpheta jamaicensis* Vahl. (**Verbenaceae**) Paste of stem and root bark is applied topically to treat dysentery.
- *Strychnos nux-vomica* L. (**Loganiaceae**) One table spoon (Bark extract) is given along with honey and ginger for dysentery.
- *Syzygium cumini* (L.) (**Myrtaceae**) Paste of stem bark is applied topically to treat swellings. The ripe fresh fruits are taken orally to reduce body heat.
- *Tamarindus indica* L. (Caesalpinaceae) Dried fruits are taken orally to treat eye infections and fruit pulp is applied externally on affected part once daily till cured for cracked sole.
- *Tectona grandis* L.f (**Verbenaceae**) Leaf juice (200 g) and honey (100 g) are mixed and taken every day with milk for 40 days for elephantiasis.
- *Terminalia arjuna* Roxb.Ex. Dc Wight & Arn. (**Combretaceae**) Fruit paste is applied topically on wounds. Bark powder is boiled with water and inhaled to cure headache to kill worms in teeth. One tea spoon powder is given with one glass of water or cow/goat milk for three months for anaemic. Stem bark extract is given daily to strengthening the heart functions as a cardiac tonic.
- *Terminalia bellerica* (Gaertn) Roxb. (**Combretaceae**) One tea spoonful seed powder is given with sugar or honey thrice a day for two days for Stomach pain.
- *Tinospora cordifolia* Miers. (**Menispermaceae**) Leaf paste is applied topically to treat wounds.
- *Toddalia asiatica* (L.) Lam. (**Rutaceae**) Leaf paste is applied along with pepper for boils, blisters & cuts.
- *Trianthema portulacastrum* L. (**Aizoaceae**) Decoction of roots is taken internally to treat Constipation and asthma.
- *Tribulus terrestris* L. (**Zygophyllaceae**) The fruit and root are mixed with boiled raw rice, taken orally to prevent white discharge in women and to treat urinary troubles. Ground 10 g seeds with 10 g dry roots of *Withania somnifera* to make powder. One tea spoonful powder is given internally daily with milk during bed time for 30 days for impotency.
- *Tridax procumbens* L. (**Asteraceae**) Leaf paste is applied topically on cuts and wounds
- *Trigonella foenum-graecum*.L (**Fabaceae**) Five gram of seeds is chewed to cure diarrhoea twice daily for two days.



- *Tylophora indica* (Burm.f.) Merr (**Asclepiadaceae**) Root juice is given orally for Asthma
- *Vanda tessellate* (Roxb.) Hook. Ex G.Don. (**Orchidaceae**) Extract of white (velamen) roots (1 spoon) given once a day for 3 days for dysentery.
- *Vitex negundo* L. (**Verbenaceae**) Leaves are boiled in water and the vapour is inhaled twice a day to get relief from headache, fever, cold, and cough.
- *Wattakaka volubilis* Cooke (**Asclepiadaceae**) Leaf paste is applied topically to treat rheumatic pain, cough and fever severe cold.
- *Withania somnifera* (L.) Dunal (**Solanaceae**) Juice of tuber and milk is advised for females with no children.
- *Woodfordia fruticosa* (L.) Kurz. (**Lythraceae**) Flowers are pounded in cow milk for blood purifier.
- *Wrightia tinctoria* (Roxb.) R. Br (**Apocynaceae**) Juice of seeds taken orally to treat indigestion.
- *Xanthium strumarium* L. (**Asteraceae**) Roots tied to get rid of the baneful (noxious) influence, as that of an evil eye.
- *Xylia xylocarpa* (Roxb.) Taub (**Mimosaceae**) With roots tied to hand, one can move in the forests, even at night, without the fear of evil spirits.
- *Zingiber officinalis* Rosc. (**Zingiberaceae**) 5ml extract of fresh rhizome is given internally in the early morning for 3 days for cough. One-gram rhizome is decocted along with 2 g of *Piper nigrum* 10g root bark of *Plumbago zeylanica*, 1 seed of *Semecarpus anacardium* in half litre water, 20 ml decoction is given internally by adding tea spoonful of cow ghee once daily for 3 days for Sexually transmitted disease.
- *Zizyphus mauritiana* Lam. (**Rhamnaceae**) Leaf and bark decoction is boiled and it is used to take bath to treat severe body pain. Dried bark powder is applied topically to treat wounds.
- *Zizyphus rugosa* Lam. (**Rhamnaceae**) Leaf paste is bandaged for bone fracture.

#### DISCUSSION

The major families which occupied first and second position were Mimosaceae-12sp Euphorbiaceae-9sp, and all 149 plant species belonging to 57 families were documented and authentically identified. According to a report of the World Health Organization (WHO), three forth of the World population cannot afford the products of the modern

medicine and have to rely on the use of traditional medicine of plant origin (Rai *et al*, 2000). The herbal remedies mentioned are of certain general and specific ailments, such as snake bite, cough, and scorpion sting, head ache, back pain body pains, cold, dandruff, dog bite, fever, hair loss, jaundice, inflammation, joint pains, lice killer, skin ailments, ear pains, eye problems, red and white discharge in women, loss of semen in urine in men, tooth ache and gum problems, stomach ache, bone fractures, conception and menstrual problems and wound healing. The resource persons are mostly lambadas, chenchus and some elderly people of local villages. The people practice and cure almost all ailments or diseases or wounds very effectively with simple locally available plants without involving much financial commitment, in majority of the cases they treat freely.

#### CONCLUSION

The country has a number of alternative medicines, like Ayurveda, Unani, Siddha and Homeopathic systems which are predominantly based on plant based raw materials in most of their preparations and formulations. Herbal preparations for various purposes including pharmaceutical and cosmetic form part of traditional biodiversity uses in India. India is one of the twelve mega biodiversity countries in the world representing 6.5 percent of world's know wildlife and 12 percent of plant life. Of this ten percent of flora is on the verge of extinction, and many more are on the threatened list while some of them are already rare of disappeared due to in hospitable atmosphere created by man to the plants.

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## ETHNO-MEDICO-BOTANY OF SOME SACRED GROVES OF ADILABAD DISTRICT OF TELANGANA STATE

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### ABSTRACT

Sacred groves are the pockets of almost climax vegetation. Preserved on religious grounds. They are located in the remote tribal areas. There are many plants grown near the temples, which are regarded as the sacred plants by different ethnic groups of the country. Sacred groves are not only the sacred ecosystems functioning as a rich repository of nature's unique biodiversity but also a product of the socio-ecological philosophy that our forefathers have been cherishing since days. In India, from time immemorial, the concept of conservation of nature has been carefully woven into the various religious beliefs and customs. Tribal folklore is rich in Magico-religious beliefs and taboos. Sacred groves are ancient natural sanctuaries that have supported the growth of several interesting and rare species of flora and fauna of the past. In the district, many centers are considered under sacred grove category. For example the temple area of Jainath, situated in Jainath, a small village 21 Kms from Adilabad, the temple area of Basara-Saraswati, Ginnedhari of Tiryani Mandal, Keslapur a remote village of Indervelli Mandal, the area of Kunthala Waterfalls, the area of Pochara waterfalls, Mahagoan of Bhainsa mandal, Narnoor of Narnoor Mandal, Dankanapally of Tiryani Mandal, the temple area of Sadalpur, an ancient Temples of Lord Bhirava and Mahadeva located at just 37 kms away from Adilabad and Sirichelma of Ichoda Mandal are known as places of sacred groves.

**KEYWORDS:** Sacred Groves, Local Tribal Communities, Adilabad District

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### Article History

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### INTRODUCTION

Sacred groves are small groves that vary in size from a few hectares to a few kilometers protected by local communities as being the sacred residences of local deities and sites for religion - cultural rituals. There are about 14,000 sacred groves. In India various Gods and Goddesses are worshipped in Hindu religion throughout India, various plant parts like bark, twigs, leaves, flowers, fruits, and seeds are offered to Gods. There are many plants grown near the temples, which are regarded as the sacred plants by different ethnic groups of the country. Sacred groves are not only the sacred ecosystems functioning as a rich repository of nature's unique biodiversity but also a product of the socio-ecological philosophy that our forefathers have been cherishing since days. In India, from time immemorial, the concept of

conservation of nature has been carefully woven into the various religious beliefs and customs. Tribal folklore is rich in Magico-religious beliefs and taboos. They believe that some Gods and deities reside in forests. The famous Indian botanist, J.D Varthk has museums of living giant trees, a treasure house of rare, endemic and endangered species, a dispensary of medicinal plants, and a garden for the botanist, a gene bank for economically important organisms, a paradise for nature lovers and a lab for environmentalists. These sacred groves are commonly undisturbed from human interference due to religious beliefs. Sacred groves are assumed to be an abode of the forest God. Sacred groves may be termed as the natural islands of climax vegetation maintained and preserved for centuries in the name of God, a village deity or a forest spirit usually looked after by the local communities but seldom touched for any kind of its produce. Sacred groves are also the home of many medicinal plants which not only help in curing several diseases of the rural population but also keep alive the heritage of the traditional system of Indian medicine. Very rare and economically important medicinal plants inhabit the groves Hindu people celebrate different festivals on various religious occasions throughout the year. In these ceremonies, people use various plants and their parts to perform different rituals and rites. The plants, which are used in religious ceremonies, are considered sacred. They are ancient natural sanctuaries that have supported the growth of several interesting and rare species of flora and fauna a single or cluster of sacred trees,

### **HISTORY OF SACRED GROVES OF ADILABAD DISTRICT**

Sacred groves (SGs) are small groves that are specific places which are protected and conserved by the local communities as being the sacred residences of local deities and sites for religious and cultural rituals. They serve as valuable storehouses of biodiversity. They are part of biological heritages and systems that have helped to preserve the representative genetic resources existing for generations. Sacred groves are the important places in which biodiversity is preserved in mostly undisturbed condition because of certain taboos and religious beliefs. Sacred groves are ancient natural sanctuaries that have supported the growth of several interesting and rare species of flora and fauna of the past. In the district, many centers are considered under sacred grove category. For example the temple area of Jainath, situated in Jainath, a small village 21 Kms from Adilabad, the temple area of Basara-Saraswati, Ginnedhari of Tiryani Mandal, Keslapur a remote village of Indervelli Mandal, the area of Kunthala Waterfalls, the area of Pochara waterfalls, Mahagoan of Bhainsa Mandal, Narnoor of Narnoor Mandal, Dankanapally of Tiryani Mandal, the temple area of Sadalpur, an ancient Temples of Lord Bhirava and Mahadeva located at just 37 kms away from Adilabad and Sirichelma of Ichoda Mandal are known as places of sacred groves. In the above sacred groves species like *Achyranthes aspera*, *Aegle marmelos*, *Azadirachta indica*, *Butea monosperma*, *Calotropis gigantea*, *Cannabinus sativa*, *Clerodendrum indicum*, *Cynodon sp.*, *Eclipta prostrate*, *Ficus benghalensis*, *Ficus glomerata*, *Ficus religiosa*, *Ficus retusa*, *Gmelina arborea*, *Horduem vulgura*, *Lawsonia inermis*, *Madhuca indica*, *Mangifera indica*, *Ocimum sanctum* *Pongamia glabra*, *Prosopis cineraria*, *Saraca indica*, *Streblus asper*, *Syzygium jambolanum*, *Tamarindus indica* and *Tectona grandis* are commonly found in this district.

### **SIGNIFICANCE OF SACRED GROVES**

They are part of biological heritages and systems that have helped to preserve the representative genetic resources existing in the surrounding regions for the generation. Sacred groves were a feature of the mythological landscape and the cult practice. Altogether the taboos, self-imposed restrictions and extra care exhibited by the community have significantly contributed to preserving the groves intact and in good shape thereby conserving the whole range of biodiversity that is housed in it. The sacred groves offer manifold ecological benefits in the conservation of biodiversity. In fact, the sacred groves represent the first major effort in conserving the biodiversity. The sacred groves also provide an

ideal surviving habitat to several species of endemic flora and fauna.

### ABOUT ADILABAD DISTRICT

Adilabad district is one of the 31 districts of Telangana and situated in the northwestern corner of the state. The district derives its name from Adilabad, its headquarters town which was named after Ali Adil Shah, the ruler of Bijapur. The district was for long not a homogenous unit and its component parts were ruled at different periods by different dynasties, namely the Mauryas, Satavahanas, Vakatakas, Chalukyas of Badami, Rashtrakutas, Chalukyas of Kalyani, Yadavas of Davagiri, Kakatiyas, Bahmanis, Imam Shahis of Ahamednager, Mughals, Bhosle Rajas of Sirpur and Chanda. Originally this was not a full-fledged district but a sub-district named Sirpur-Tandur which was created in A.D 1872 with Edulabad (Adilabad), Rajura and Sirpur as its constituent talukas. In 1905 the status of this sub-district was raised to that of an independent district with headquarters at Adilabad.

Adilabad is one of the most backward districts of Telangana. It is known for its characteristic presence of Sahyadri hills (locally called as Satnala Range) in its northern boundary, a richness of forests as well as rich hydrocarbon resources like coal mines. The district encompassed with most ancient and innocent Adivasis. The rural folk is known for their famous carved wooden work, the most internationally known art of rural painting, small-scale industry is well established in Nirmal town, popular as "Nirmal paintings". The district is also having a 'Tiger reserve' second of its kind in A.P at Kawal known as "Kawal Tiger Reserve" and bestowed with a number of scenic waterfalls at various places of the district like "Kuntala waterfalls" and "Pochara waterfalls".

### MATERIALS AND METHODS

Intensive fieldwork was undertaken by the author for a period of five years from January 2007 to December 2011. Good rapport was established with the people. Locally well known herbal healers. During these visits various religious people Vidhyas/ Vejjus/ Pujaris/ Vaddegudus/ Gunyas etc. belonging to Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras tribal communities of the district who are still practicing traditional medicine are identified, religious ceremonies were made to collect the information different ethnic group of people who use plants materials in different rituals, ceremonies, and any other religious purposes. The information on medicinal uses of the plants was also gathered from the local and tribal people residing in the interior areas of the district and the published literature. The data on the botanical names, family, vernacular names, religious virtues, parts used and medicinal uses along with active principle and status were also mentioned in the work. Important voucher specimens have been kept in the Herbarium, Department of Botany, Osmania University, Hyderabad.

### Sacred Groves Flora

**Table 1**

S.No	Botanical name	Religious virtue	Parts used	Diseases Cured	Availability Status
1.	<i>Achyranthes aspera</i> (Amaranthaceae)	The plant is offered to the Hindu deity Ganesh during the holy month of Badrapada.masam	Whole plant	Fever, Tooth problem, Scorpion sting	Wild
2.	<i>Aegle marmelos</i> L (Rutaceae)	Shiva Pooja cannot be performed without its leaf (Bilwa)	Leaves and Fruits	Diarrhoea, Dysentery and Skin Problems	Wild
3.	<i>Azadirachta indica</i>	Twigs are hanged over the	Twigs and	Tooth Problems, Skin	Wild

	Juss. L (Meliaceae)	doors when there is smallpox in epidemic form. Twigs are also used widely in the festival of Bonalu.	leaves	problems	
4.	<i>Butea monosperma</i> (Lamk.) Taub. Ln: Palas (Papilionaceae)	Flowers are using in 'Holy' festival	Bark	Piles, Tumors and menstrual disorder, antiseptic and cooling	Wild
5.	<i>Calotropis gigantea</i> (L.) R.Br. (Asclepiadaceae)	Leaves and flowers are used to worship lord Shiva and Ganesha	Latex	Bone Fever	Wild
6.	<i>Clerodendrum indicum</i> (L.) Kuntze (Verbenaceae)	Used for worshipping Fire	Roots, Leaves	Asthma, Chest pain, cough, Cholera, and Fever	Wild
7.	<i>Cynodon dactylon</i> Pers. Ln (Poaceae).	Gane's puja and in any other sacred rituals	Whole plant	Body cooling Diarrhoea	Wild
8.	Anacardiaceae (L.)	Used in death rituals	Whole plant	Cough and Fever	Wild
9.	<i>Ficus bengalensis</i> L. (Moraceae)	Used in Marriage ceremony	Leaves, Roots	Hair growth Piles	Wild
10.	<i>Ficus glomerata</i> Roxb. (Moraceae)	Used in Marriage ceremony	Stem Bark Fresh Fruits.	Snakebite Red discharge Diarrhoea	Wild
11.	<i>Ficus religiosa</i> L. (Moraceae) Ln.	Used in Marriages and 'Upanayan'	Stem bark	Wounds, Sprains	Wild
12.	<i>Ficus retusa</i> L (Moraceae)	This leaf is one of the pancha bilwas and used in Devi pooja	Leaf		
13.	<i>Gmelina arborea</i> Roxb. Ln. (Verbenaceae)	Ceremonial sacrifice	Leaf	Cough and cold	Wild
14.	<i>Horduem vulgure</i> L. (Poaceae)	Used in Marriage Ceremony	Seeds	Improve Digestion	Cultivated
15.	<i>Lawsonia inermis</i> L (Lythraceae)	Marriage Ceremony	Leaves	Skin disease, Typhoid	Cultivated
16.	<i>Madhuca longifolia</i> var. <i>latifolia</i> (Roxb.)A Chev (Sapotaceae)	Marriage Ceremony	Stem bark	Body pains Dog bite.	Wild
17.	<i>Mangifera indica</i> L (Anacardiaceae).	Twigs are used as samidha and offered to sacred fire (Havan kunda)	Latex Unripe fruits.	Heal cracks Unripe fruits	Cultivated
18.	<i>Ocimum sanctum</i> L (Lamiaceae)	Hindus plant this tree in their houses as a holy plant and offer a diya to it.	Leaves	Coughs, Ringworm, Skin diseases and Earache	Cultivated
19.	<i>Pongamia glabra</i> (L.) Pierre (Fabaceae)	Marriage Ceremony	Leaves	Feaver	Wild
20.	<i>Prosopis cineraria</i> (L.) Druce (Mimosaceae)	Festaval of Dasara	Leaves	Un wanted hairs	Wild
21.	<i>Streblus asper</i> Lour. (Moraceae)	A Widower whose spouse died untimely, marries a 'Saura' tree to overcome the ill effect of the planets after which he can marry again	Leaves, bark, roots	Ulcers, Sinuses, Swellings and boils, fevers, diarrhea and dysentery	Wild
22.	<i>Butea monosperma</i> (Lamk.) Taub. (Papilionaceae)	Flowers offered to gods in 'Holy' festival.	Bark	Feaver	Wild

Table 1: Contd.,

23.	<i>Calotropis gigantean</i> (L.) R.Br. (Asclepidaceae)	Ganesh puja, shiva Hanuman puja	Whole plant and flower	Cough, asthma, fever	wild
24.	<i>Citrus medica</i> L. (Rutaceae)	Ceremonial sacrifice	Roots, Fruits		Cultivated
25.	<i>Clerodendrum indicum</i> (L.)Kuntze (Verbenaceae)	For worshiping fire	Roots, leaves	The bark of root is used for Asthma, Chest pain, cough; leaves are useful for Cholera and fever.	
26.	<i>Cocos nucifera</i> L. Ln. Narikol (Arecaceae)	All religious, rituals, ceremonial sacrifices etc from cradle to grave, coconut plays very important role. Its leaves are also used in decorating Marriage gate	leaves	Coconut water cooling, diuretic, nutritive, aphrodisiac used in dysentery and diarrhoea.	Cultivated
27.	<i>Curcuma longa</i> L. (Zingiberaceae).	Marriage ceremony and few other rituals	Rhizomes	Turmeric powder is antiseptic, used for skin disease, cough, cold and asthma.	Cultivated
28.	<i>Cynodon dactylon</i> Pers. Ln (Poaceae).	Ganes puja, Shiv puja and in any other sacred rituals	Whole plant	Hemostatic and in uterine hemorrhage.	: Wild
29.	<i>Datura metel</i> L. (Solanaceae)	Shiv Puja specially in Shivaratri	Leaves, seeds	Leaves used in Asthama, epilepsy, seeds are used in leprosy and dog bite.	Wild
30.	<i>Demostachya bipinnata</i> . Stapf.	Rishi and Pitri puja, Kushasan, in every ritual.	Root	Roots used as diuretic, galactagogue, in Ashma and jaundice	Wild
31.	<i>Ficus baghalensis</i> L. (Moraceae)	Marriage ceremony	Bark and latex	Powder of bark and latex are applied in rheumatic pains, infusion of bark is effective in diabetes, dysentery, gonorrhoea and seminal weakness.	Wild
32.	<i>Ficus racemosus</i> L. (Moraceae)	Ceremonial sacrifice, Mising people eat the tender leave in various rituals.and Tribes people make dish from the leaves for any religious festivals	Bark and latexan fruit	Used for piles, and diarrhea, fruits are carminative bark anti-diabetic.	Wild
33.	<i>Ficus religiosa</i> L. (Moraceae)	Vishnu and Pitri puja, in Yayna Karma, marriage, 'Upanayan'	Bark, fruits	Bark used for gonorrhoea, young shoots and fruits laxative, fruits used in asthma.	Wild
34.	<i>Dioscorea bulbifera</i> L. (Dioscoreaceae)	Tubers regarded sacred boiled and eaten in Magh Bihu	Tuber	Tebers used for abscess and ganglionar inflammation, tubers used in piles, dysentery	Wild
35.	<i>Eclipta prostrate</i> (L.) L. (Asteraceae)	Used in death rituals, Nepali people used the plants at the time of offering panda.	Whole plant	Leaves used for cough and fever, used in hepatic and spleen	Wild

				enlargements and in skin problems, root emetic and purgative, applied in wounds	
36.	<i>Gossypium arboretum</i> L. (Malvaceae)	Cotton used in Diya and all religious ceremonies, sacrificial thread 'lagun' used by Brahmins	Roots, seeds	Roots diuretic, used in diarrhea, dysentery, leprosy and skin disease, seeds used in gonorrhoea	: Cultivated
37.	<i>Lawsonia inermis</i> L. (Lythraceae)	Marriage ceremony and sacrifice.	Leaves	Leaves used as cooling agents, hair dye, used in skin disease, tuberculosis and typhoid.	: Cultivated
38.	<i>Musa sapientum</i> L. Ln. Kol (Musaceae)	Satya Narayan Puja, Prosad, Mandap and all other religious ceremonies, leaves used as plates for prosad, in Assamese society it is a sacred plant.	Whole plant	Fruits used in loose motion and flower juice mixed with curd given in dysentery and menorrhagia.	Cultivated and wild
39.	<i>Nelumbo nucifera</i> Gaertn. (Nymphaeaceae)	Ceremonial, puja and sacrifice.	Whole plant	Roots used for ringworm, dysentery and dyspepsia, seeds used to stop vomiting, diuretic, anti-fungal, flowers astringent and cooling	Wild
40.	<i>Ocimum sanctum</i> L. (Lamiaceae).	: Puja and Prosad in Kati Bihu, Assamese people plant the sapling and kindle a diya under it, the disciples of Lord Krishna, Chaitanya wear 'Tulsi Mala' around their necks	Whole plant	Leaves used for coughs, inflammations, ringworm and other skin diseases, earache, root is given in Malaria, root soil used for skin disease.	Cultivated
41.	<i>Oryza sativa</i> L. (Poaceae) Ln.	In all Puja and sacrifice rice is used, mixed with ghee, sesame used in fire sacrifice (Hom). The use of 'Rice tika' in the forehead is seen in some Hindu communities.	Grains	Leaves are used for asthma, fever,	Cultivated
42.	<i>Piper betle</i> L. (Peperaceae)	In all puja and sacrifice betel leaves are important.	Leaves	Free digestion	Cultivated
43.	<i>Santalum album</i> L. (Santalaceae)	Wood paste (Chandan) and wood stick are used in all pujas. The widows take white chandan spot on their foreheads.	Wood	Paste of wood stick applied on normal burns and prickly heat	Wild and cultivated.
44.	<i>Mangifera indica</i> L. (Anacardiaceae)	Leaves are used in all religious ceremonies; twigs are used as samidha and as offering to sacred fire (Havan kunda).	: Leaves, fruits, bark, seeds	Leaves are used for cough, asthma, bronchitis, diarrhea, fever, diabetes and high blood pressure; fruits are digestive given in hemorrhoids of uterus, lungs and intestine; laxative and diuretic, seeds anthelmintic, bark is useful in amoebic	Cultivated



				dysentery.	
45.	<i>Vitex nigundo</i> L. (Verbenaceae)	Twigs used in Nepali marriage, in worshipping jungle god	Leaves	Leaves are used in blister, boil, body ache, cold, cough, fever, gum trouble, piles and rheumatic pain.	wild
46.	<i>Ziziphus mauritiana</i> Lam. (Rhamnaceae)	The plant twigs used to expel the spirits from the house or from their compound by some tribal people of this region.	Leaves, fruits, root	Roots are useful for fever, wounds and ulcer, leaves used in typhoid fever, fruits are aphrodisiac, seeds used in pox.	Cultivated, wild
47.	<i>Tagetes erecta</i> L. (Asteraceae)	Wreath (Mala) made of flowers used in Bhatriditiya, a brother-sister's festival.	Flower, bark, root, and whole plant	Infusion of herbs used against rheumatism, cold and bronchitis. Leaves and flowers used as carminative, diuretic and vermifuge.	Cultivated

## RESULTS

Altogether 47 different plant species have been identified as sacred plants by different ethnic groups of Adilabaddistrict. Though there is many more information about sacred plants but only some of the most commonly used plants having medicinal value are taken into consideration. During this project work, some important information has been unearthed. Fewsuch information are given here below. There is a long experienced traditional belief among the people that they have selected some plants which are edible or not edible during or after the religious works. According to Gautamiya Tantra during the religious works, a person should eat boiled sunned rice and ghee. The Agasthya Samhita opines that the following materials may be eaten during the religious works. These materials are *Cocos nucifera*, *Musa sapientum*, *Mangifera indica*, *Phyllanthus emblica*, *Artocarpus heterophyllus*, *Terminalia chebula*, *Oryza sativa*, *Vigna radiata*, *Sesamum indicum*, *Hordeum vulgare*, *Chenopodium album*, *Chorcorus capsularis*, *Raphanus sativa*, *Citrus aurantifolia*, *Citrus aurantium* etc. Plants not edible before or during religious works: According to Yoginitantra, the following plants should not be taken before or during the religious works. The plants are *Tamarindus indica* (*Teteli*), *Cajanus cajan* (*Urohi*), *Benincasa hispida*, *Cocos nucifera* (*Narikol*) etc. The widows should not eat onion, all kinds of spices and chilly.

## CONCLUSIONS

The study of sacred and religious plants may give an idea about the extent of concern shown by people of different eco-floristic regions about the conservation of plants. IT may be mentioned here that most of the sacred plants usually have great utility value. If every Mandir or Masjid committee, a committee will protect their sacred plant grown around these religious places automatically a gauge number of plant species will be conserved. Many sacred groves of India are the best examples of conservation of Biodiversity. Besides, the plants of the sacred groves or religious places have many plants of medicinal use. People have a belief that using the plants of the religious places can cure any kind of disease. This infusion of superstitious myths or beliefs and medicinal properties of plants plays a very significant role in their conservation and conservation of Biodiversity, The forest is now being maintained by forest management committee comprising of the local people. Maharishi Charak has said that there are no plant on the earth which does not have medicinal value, the same is the belief that if we use any plant for performing *Puja* the same will definitely have the

potential for improving the health. So it can be said every plant used in worship, ceremonies have also medicinal value.

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## TRADITION OF DIVERSIFIED WILD EDIBLE FRUIT PLANTS IN ANANTHAGIRI RESERVE FOREST AREA OF VIKARABAD DISTRICT, TELANGANA

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### ABSTRACT

The paper deals with 19 species of wild edible fruits eaten in various ways by the tribal and other people living in and around Ananthagiri reserve forest area and few of the recorded species are already known for their edible purpose, however the uses of some taxa are uncommon.

**KEYWORDS:** Ethno Botany, Wild Edible Fruits, Ananthagiri Reserve Forest, Telangana

### INTRODUCTION

India is the second largest country in the world in respect to the human population. Over 600 communities are covered under 300 ethnic groups residing in about 6000 villages of India in different forests and vegetation types these ethnic communities have acquired good knowledge about play a significant role in the rural economy of India by providing nutrient food supplement and also generating side income for the poor people. Fruits collected by them from natural forests are often seen on sale in local markets. Many valuable fruits which are familiar to certain areas or communities are unknown to others. The cattle grazers, woodcutters, poachers and forest people generally use these fruits in the forests. The wild edible fruits of Ananthagiri forest remained unexplored. Efforts have been made to explore wild edible fruits of this region. During the investigations regarding uses of wild fruits. Data were collected from the tribals and other local people.

### ENUMERATIONS

Table 1

Sl.No	Botanical Name	Family Name	Description	Flowing Fruitig
1	<i>Ampelocissus latifolia</i> (Roxb.) Planch	Ampelidaceae	Woody climbers, deep brown-red flower. Fruits black succulent berries, which are sweet and juicy	Fl: June-July Fr: Aug-October
2	<i>Bridelia stipularis</i> (L.) Bl.	Euphorbiaceae	Large woody climber, flowers monoecious, green. Fruits red	Fl: May-Oct Fr: Dec-Jan
3	<i>Buchanania lanzan</i> Spreng	Anacardiaceae	A small straight tree, flowers white	Fl: Jan-March Fr: Apr-May
4	<i>Capparis zeylanica</i> L.	Capparidaceae	Shrub with white or pink flowers, Fruits become red when ripe and are eaten	Fl: Mar-May Fr: Sept-Oct
5	<i>Clausena excavata</i> Burm	Rutaceae	An under shrub with alternate leaves, flowers green. Fruit ellipsoid and eaten when ripe	Fl: May-June Fr: July-Aug

Table 1 Contd.,

6	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	Climbers with white flowers, fruits oblong, cylindrical. Raw fruits green, scarlet when ripe. Unripe fruits used as vegetables and pickled	Fl: Aug-Dec Fr: May-June
7	<i>Dillenia pentagyna</i> Roxb.	Dilleniaceae	Small trees, flowers white. Raw fruits are edible	Fl: March-April Fr: May
8	<i>D. indica</i> L.	Dilleniaceae	Tree, flowers white solitary. The large fleshy accrescent calyces which form the outer covering of the fruit are eaten before they are quite ripe, usually after cooking	Fl: May-June Fr: Sept-Feb
9	<i>Diospyros malabarica</i> (Desr.) Kostel	Ebenaceae	Handsome trees, flowers white fragrant, fruits globose. Fruits are edible	Fl: Mar-April Fr: ripen the following March-April
10	<i>D. melanoxylon</i> Roxb	Ebenaceae	Deciduous large tree, flowers white, fruits globose, yellow-brown when ripe and fragrant. Fruit pulp is sweet and eaten raw	Fl: April-May Fr: ripens the following May
11	<i>Erycibe paniculata</i> Roxb	Convolvulaceae	Climbing shrubs, flowers yellowish-white. Berry black with dark-purple flesh. The fruits are sweet and are eaten	Fl: May-June March-June
12	<i>Flacourtia jangomas</i> (Lour.) Raeusch	Flacourtiaceae	Small tree, flowers in glabrous racemes, Fruit purple when ripe and eaten.	Fl: June Fr: Oct-Jan
13	<i>Ficus racemosus</i> L.	Moraceae	Large trees, recepts are globose. The fruits are largely eaten	Fr: Mar-June
14	<i>Gardenia gummifera</i> L.f.	Rubiaceae	A handsome shrub, flowers large and white. Fruits ovoid with fleshy mesocarp and hard thin endocarp. The fruit is eaten.	Fl: March – May Fr: June-Aug
15	<i>Meyna spinosa</i> Roxb. Ex Link var. <i>pubescens</i> Robyns	Rubiaceae	A large shrub, flowers small green. Young leaves are eaten as a vegetable. The fruits are eaten	Fl: June-Aug.
16	<i>Phoenix acaulis</i> Buch. – Ham..ex Roxb.	Arecaceae	A common plant. Drupes are red, finally black. Ripe fruits are eaten.	Fl: March-april Fr: May-June
17	<i>Schleichera oleosa</i> (Lour.) Oken.	Sapindaceae	Deciduous tree, leaves leathery and dark green. Fruits ovoid with fleshy pulp. Yellow pulp is eaten when ripe, pleasant and acrid in taste. Fruits are pickled.	Fl: March Fr: June
18	<i>Semecarpus anacardium</i> L.f.	Ananacardiaceae	Small trees, flowers dullgreenish-yellow. Fruits are oblong ovoid drupes, finally, become black. The fruit is eaten when completely ripe.	Fl: June-Sept Fr: Nov-Dec
19	<i>Spondias pinnata</i> (L.f) Kurz	Anacardiaceae	Middle sized tree, flowers white. Fruits are large and become yellow when ripe. Fruit is eaten as a condiment and made into chutney and also eaten after ripening.	Fl: Feb-Mar Fr: August

## DISCUSSIONS

Use of some little known wild fruit species like *Bridelia stipularis*, *Clausena excavata*, *Dillenia pentagyna*, *Erycibe paniculata*, *Gardenia gummifera*, *Meyna spinosa*, etc, as edible fruits is an interesting observation. The tribals and other rural people may be encouraged in their edible fruit plant species reported in this paper form a significant component of the economic life of locals. There is no doubt that the edible wild fruits influence the living of the tribal people. Attention needs to be paid for the collection and conservation of germplasm of such taxa which are being grown in the backyards of these tribals in remote forests areas since long. Additional studies about nutritional values and

public awareness regarding their edible potential are very much desired.

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## (RESEARCH PAPER IN ETHNOBOTANY)

**Abstract:**

The present study deals with the documentation and evaluation of medicinal plants used by the tribal people in the primary health care in and around Dhamagundam forest area, Vikarabad district. The resource persons are mostly lambadas, chenchus and some elderly people of local villages. It revealed valuable information about the ethnomedicine of the local tribals of this Dist. The present study is thus aimed at to understand i) the potentiality of ethno-medicinal knowledge of the local tribals, ii) the plants which are in use for curing the diseases them. Further, a detailed data regarding the efficacy of the drug and the curing efficiency level of the plant drugs used by the local as well as tribal communities of the district.

**Keywords:** Medicinal plants, Traditional botanical knowledge, Tribals, Arthritis, Dhamagundam forest, Vikarabad district

**Introduction:**

Documentation of Ethno botanical studies of any area has attained importance due to fast depletion of folklore knowledge and their uses because of modern life styles. The present use of modern medicine is increasing the vulnerability of human beings to various illnesses of unknown nature. Several diseases are being cured from different plant extracts and products. Arthritis is the most shared disease among auto-inflammatory diseases. [1-13] the dominant allopathic systems of Medicine though providing treatment to many diseases also cause deleterious side effects on human body. All these factors are forcing the man to look for alternative sources more particularly from the plant origin. The usefulness and efficacy of the plants as curative agents of many human diseases is long known. Traditionally, the knowledge of plants as source of medicines for different diseases is well known through traditional medicinal systems of Ayurveda, Siddha, Unani, Homeopathy, Chinese's and Tibetan medicine. [2] The vast tracts of Indian sub-continent and its rich flora and fauna are still to be explored. The mandals under the study are partly covered by

the forest area with interspersed human habitations, small villages and tribal thanadas. They use many plants for various ailments as well as food, fibers and other uses. Many of these plants are endemic and not known to outer world. The knowledge of plants using as medicines gained by the people through generation is being lost through passing generations. [12] The information gained in this study will definitely be useful in preparing medicines and extracting active principle substances from the plants to help cure many ailments with better therapeutic value. The study of chemical properties of the plant extracts and their efficacy evaluation scientifically will be useful in providing better Medicare for the rural people. [3]

**Material and Methods**

The present study includes the survey of nearly all villages in surroundings of Vikarabad Dist, during the year (May 2003 – May 2006). Several villages of the target area have been visited to find out resource persons, herbal practitioners and village heads. After establishing a better rapport with the villagers, herbal practitioners' information was gathered and documented

**Observation Table**

Sr.No	Botanical Name	Family	Local Name	Mode of application
1	<i>Aeglemarmelos</i> (L.) Corr.	Rutaceae	Bilvamu, Maredu,	Make paste with leaves and mix equal quantity of sesame oil. Apply this paste externally on the affected part once a day till cured. [6]
2	<i>Alangiumsalvifolium</i> (L.f.) Wang	Alangiaceae	Uduga,	Grind together handful stem bark with five fruits of black pepper and wrap it in cotton cloth to dip in 250 ml of hot water for fifteen minutes. 100 ml of this solution is given internally for one time, repeat it after a week if necessary [8]
3	<i>Annonasquamosa</i> L.	Annonaceae	Seethaphal	Leaves paste is applied externally on affected part once daily till cured [7]
4	<i>Barleriaprionitis</i> L.	Acanthaceae	Mullagorinta, Gattugolimiti	Roust fresh leaves and put them on affected part when they are slightly warm once daily till cured. [4]
5	<i>Bauhinia racemosa</i> Lamk.	Caesalpinaceae	Are, Aare chettu,	Make decoction with stem barks of <i>Bauhinia racemosa</i> , <i>Semecarpusanacardium</i> and 30 ml is given internally once a day for two days. [4]
6	<i>Brideliaretusa</i> (L.) Spreng	Euphorbiaceae	Mulumaddi	50 g crushed stem bark is decocted in 100 ml sesame oil for 15 minutes and it is applied externally on affected part of the body once daily till cured. [5]
7	<i>Bryonopsislaciniosa</i> (L.) Naud	Cucurbitaceae	Ningidonda	Leaves are decocted with sesame oil and applied topically twice daily for 15 days [8]
8	<i>Calotropis gigantea</i> (L.) R.Br.	Asclepiadaceae	Jilledu, Nallajilledu.	Milk sap is applied externally on the affected part twice daily for three days. [8]
9	<i>Cardiospermumhalicacabum</i> L.	Sapindaceae	Buddakaakarateega, Patapata	50 g leaves are decocted in 100 ml sesame oil and applied on affected part once daily till cured. [9]
10	<i>Cassia fistula</i> L.	Caesalpinaceae	Rela	Apply paste with made up of leaves externally

11	<i>Celastrus paniculatus</i> Willd.	Celastraceae	Jyothismathi	during bedtime for 3-4 days[2] 10 g seeds are crushed and boil it in 100 ml of sesame oil for 15 minutes and it is applied externally on the affected part once daily during bed time till cured [6]
12	<i>Clerodendrum multiflorum</i> (Burm. f.) O. Ktze.	Verbenaceae	Thakkalichettu	Leaf paste is applied externally on the affected part once a day for two days. (Cheviti Ramulu, Madduru)[7]
13	<i>Cryptolepis buchananii</i> Roem. & Schult.	Asclepiadaceae	Adavipalateega	Make chutney with leaves of <i>Cryptolepis buchananii</i> and <i>Cissus quadrangularis</i> and given to eat like chutney twice a week for 3-4 weeks [8]
14	<i>Datura metel</i> L.	Solanaceae	Ummetha, Nallaummetha	Leaves paste is applied on the affected part once a day for 2 days [7] [11]
15	<i>Justicia procumbens</i> L.	Acanthaceae	Papadaku	20 g of whole plant is ground and boil it in 100ml of coconut oil for five minutes and apply externally on the affected part till cured.[2]
16	<i>Lawsonia inermis</i> L.	Lythraceae	Mydaku, Gorintaku	Make paste out of stem bark and apply this paste externally once daily for two weeks. [9]
17	<i>Vitex negundo</i> L.	Verbenaceae	Vayilaku	Leaves paste is applied externally once daily till cured. [9] [10]

**Result and Discussion:**

The present study deals with the documentation and evaluation of medicinal plants used by the tribal people in the primary health care in Vikarabad Dist. The study started in the month of May, 2003 and went on up to May, 2006. It revealed valuable information about the ethno medicine of the local tribals of this Dist. It is invaluable and having immense potential for the primary health care of the people in this area. The Practitioners also felt that of late their practice is dwindling due to non availability of plants which were plenty till recently, due to loss of habitat and forest cover in this area. They felt that proper documentation of the knowledge of herbal practitioners should be taken up immediately in all the areas of the Dist before it disappears and conservation of medicinal plants in the area is very much in need. The present study elicits the importance of local herbal practices and availability of medicinal plants in the area, which will help in self sufficiency for their primary health care practices.

**Conclusion;** The people practice and cure almost all ailments or diseases or wounds very effectively with simple locally available plants with out involving much financial commitment, in majority of the cases they treat freely. The method of herbal practice is also decreasing as the practitioners are not passing the knowledge to the next generations before their death and also due to lack of proper written documentation. Though this is a small inventory which helped in identifying the gravity of the situation of loss of medicinal biodiversity of the area and subsequently non availability of the treatment by the herbal practitioners to the local poor people of the area, unless other wise the conservation and afforestation practices are taken.

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**A REVIEW ARTICLE -  
“ETHNOBOTANICAL USES OF MEDICINAL PLANTS IN ADILABAD  
DISTRICT, TELANGANA STATE, INDIA”**

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**ABSTRACT**

The present study is aimed at the preparation of an inventory of plants and their medicinal uses practiced by tribals in Adilabad district, related to the traditional medicinal practices of local tribal communities such as Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras. We estimated that only one percent of the forest area is explored, 7% under explored and 92 % forest flora has not been explored. In the above context the author has taken up an in depth survey of Medicinal Plants which are endemic and unique to this district. The present study deals with ethnic methods of “art of healing” practiced by tribals such as Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras of Adilabad district.

**Keywords:** *Tribal medicine system, Adilabad, Tribal Community, Art of Healing*

**INTRODUCTION**

Since time immemorial human beings have been using plants for their survival and development. In the beginning they were food gatherers and hunters of food, but subsequently concentrated on plants that are useful for other purposes, such as for shelter, health care and artifact. The understanding of the use of plants for food, health care, shelter, agriculture and other purposes got accumulated over generations as traditional knowledge. The indigenous people of various regions have developed their own way of using plants for their health care and following their own culture, customs, folk songs and food habits. This knowledge is transferred through orally from one generation to another. People all over the world are still dependent on the traditional plant based healing practices as it is cheap and easily available. Rural people and tribal communities who live in the forest area predominantly depend up on locally available medicinal plants to take care of their health and has become an integral part of their culture. Thus the accumulated diversified traditional knowledge has led to the dawn of a science called Ethnobotany. The term Ethnobotany was first coined by an American scientist John William Harshberger in 1895. He defined that Ethnobotany as the study of the relationship that exists between the people and plants. The word ‘ethno’ means a group of people sharing common origin, culture, language, customs, beliefs and traditions. Ethnobotany is studying plants through an anthropological approach. Later on many Ethnobotanists explored that how plants are used for various purposes such as food, medicine and religious use. Documentation of traditional knowledge through ethnobotanical studies is very important for conservation and utilization of indigenous people’s knowledge. Initial studies in the last 50 years have been primarily devoted to the preparation of inventories of plants of a certain region or specific ethnic groups. Many scientists, naturalists and thinkers from outside the community of ethnobotanists, started emphasizing the importance of ethnobotanical inquires and explorations. Faulk (1958) wrote the first book on Ethnobotany entitled “An introduction to Ethnobotany”, from India Jain (1981) published a book with the title “Glimpses of Indian Ethnobotany” and it is a compilation of various ethnobotanically related articles of different phyto geographical area as and the tribes of India. The knowledge of using plants and

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plant parts as medicine has been rapidly eroded due to various factors but primary reason is lack of documentation and preservation of such knowledge and lack in transmission of knowledge to the younger generation. The valuable traditional knowledge, once lost it will be a permanent loss. Due to lack of education, prevailing myths and beliefs among the communities this knowledge was not documented properly hence the ethnobotanical documentation is assuming greater importance in the wellbeing of entire humanity. The vast tracts of Indian sub-continent and its rich flora and fauna are still to be explored. The people living in the forests and its vicinity and the tribal communities are using many plants as medicine for their health care. Ethnobotany or in wider sense Indigenous Knowledge (IK) is playing significant role in the sectors of agriculture (seed varieties, intercropping techniques, pest control, crop diversity, animal production and animal health care), biology of human health care (through traditional medicine the use and management of natural resources (soil conservation, irrigation and other forms of water management) and education (oral tradition, local languages). And it also helps to sustain our agriculture, environment and conservation of biodiversity. In a recent floristic survey - GAP- Analysis of Adilabad district has been done by Reddy. C.S. (2010) and reported that “Adilabad district is least explored botanically”. He estimated that only one percent of the forest area is explored, 7% under explored and 92 % forest flora has not been explored. In the above context the author has taken up an in depth survey of Medicinal Plants which are endemic and unique to this district. The present study deals with ethnic methods of “art of healing” practiced by tribals such as Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras of Adilabad district. Telangana is a state of Telugu-speaking people. In the recent past various ethnobotanical studies have been made to explore medicinal plants from the ethnic tribal communities of all districts of Telangana. Botanical Survey of India has initiated recording and documenting ethnobotanical data in Andhra and Telangana. Andhra Pradesh in early eighties in order to provide preliminary information for further critical studies leading to sustainable utilization of bio-resources and also to face the challenges of bio-piracy. Kapoor & Kapoor (1980) noted the medicinal plant wealth of Karimnagar district. Hemadri (1990) gave list of plant names, which are of medicinal value from the districts of Karimnagar and Warangal. Ravishankar (1990) On Ethnobotanical Studies in Adilabad and Karimnagar Districts, Andhra Pradesh, India. Ph.d. Thesis. Bharathiar university, Combatore. In 1996, P. Kumar & Pullaiah (1996). Herbal plants in Mannur forest, Mahabubnagar district, Andhra Pradesh. K.N. Reddy *et al.* (1998) provided the detailed account of plants used in ethnoveterinary practices in Warangal district. As many 49 additions (added as Appendix) to the Dictionary of Ethnoveterinary Plants of India by S.K. Jain (1999). There are studies on the ethnobotany of Gonds of Telangana region (Karimnagar district and Warangal district: Hemadri 1990; Adilabad district: Ravishankar & Henry 1992; C.S. Reddy *et al.* 2002 Warangal district) while the works on Adilabad is about ethnobotany that of Karimnagar and Warangal concern ethnoveterinary medicine. Rao & Reddy 1999, 2000 and Reddy (PR) & Rao Documented the folklore and ethnomedicinal drugs from Ranga reddy district for bone fracture, cattle, etc. C.S. Reddy *et al.* (2000) enlisted the folklore biomedicine of common veterinary diseases in Nalgonda district. Upadyay & Chauhan (2000) presented the ethnobotanical observation on Koya tribe of Gundala mandal in Khammam district. The Ph.D. works of Naqvi (2001) and C.S. Reddy (2001) include chapters on ethnomedicine from Karimnagar and Warangal districts, respectively. K.N. Reddy (2002) provided the information for 550 ethnobotanical plants in his Ph.D. work on Khammam district. K.N.Reddy & Raju, (2002). Presented paper on ethnobotanical observations on Konda Reddis of Mothugudem in Khammam district. Raju V.S. & Reddy (2005) published a paper on Ethnobotanic medicine for Dysentery and Diarrhoea from Khammam district. Murthy *et al.* (2007) published a note on the ethno veterinary practices indulged by the tribes in the area (Narasampet) of pakal Wildlife Sanctuary, Warangal district. Ravishankar (1990) On “Ethnobotanical studies in Adilabad and Karimnagar districts of Andhra Pradesh, India, Madhu (2010) submitted his thesis on ““Ethnobotanical studies in Adilabad forest area medicinal plants and community”. Later on

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Ravi Shanker and Henry (1992) were published a note on the medicinal plant wealth of Adilabad district. Previous authors had done some exploratory studies on ethnobotany of the district; Dr. Koppula Hemadri (1994) published Shastravettalanu Akarshistunna girijana vaidyam. In the above studies inventories of medicinal plants used for human ailments were documented from few localities. Vedavathy, S; Mrudula, V & Sudhakar, A: Tribal Medicine of Chittoor District, Andhra Pradesh (India), Herbal Folk Research Centre, Tirupati, 1997. Pullaiah *et al* (1998) reported Ethnomedicinal plants of the district and they provided scientific and vernacular names for each species. “While Mubeen *et al.* (2004-2005) prepared an inventory of important medicinal plants of Adilabad district of Andhra Pradesh. Swamy and NSNS (2008) reported some ethnomedicinal plants used by tribes in the Nirmal forest division Adilabad District of Andhra Pradesh. The study aimed to record some interesting ethnomedicinal plants available and which are practiced by surrounding local adivasis of Nirmal forest division for their health care.

### **Aims and Objectives**

The present study is aimed at the preparation of an inventory of plants and their medicinal uses practiced by tribals in Adilabad district, related to the traditional medicinal practices of local tribal communities such as Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras to achieve the following objectives viz., 1) To record the traditional medicinal practices of the Tribal communities of Adilabad district. 2) Botanical identification and herbarium preparation of the plants used by them. 3) To record the methodology followed by them in diagnosis during administration and curing of the diseases. 4) To document the scientific data for future reference/studies. 5) To study the other non-medicinal uses of the plants such as food, fodder and other uses.

## **STUDY AREA**

### **HISTORY OF ADILABAD DISTRICT**

The district derives its name from Adilabad, its head quarters town which was named after Ali Adil Shah, the ruler of Bijapur. The district was for long not a homogenous unit and its component parts were ruled at different periods by different dynasties, namely the Mauryas, Satavahanas, Vakatakas, Chalukyas of Badami, Rashtrakutas, Chalukyas of Kalyani, Yadavas of Davagiri, Kakatiyas, and Bahmanis, Imam Shahis of Ahamadnager, Mughals, Bhosle Rajas of Sirpur and Chanda. Originally this was not a full fledged district but a sub district named Sirpur-Tandur which was created in A.D 1872 with Edulabad (Adilabad), Rajura and Sirpur as its constituent talukas. In 1905 the status of this sub-district was raised to that of an independent district with head quarters at Adilabad. Adilabad is one of the most backward districts of Telangana. It is known for its characteristic presence of Sahyadri hills (locally called as Satnala Range) in its northern boundary, richness of forests as well as rich hydrocarbon resources like coal mines. The district encompassed with most ancient and innocent Adivasis. The rural folk are known for their famous carved wooden work, the most internationally known art of rural painting, small scale industry is well established in Nirmal town, popular as “Nirmal paintings”. The district is also having a ‘Tiger reserve’ second of its kind in T.S at Kawal known as “Kawal Tiger Reserve” and bestowed with number of scenic water falls at various places of the district like “Kuntala water falls” and “Pochara water falls”

## **FORESTS AND VEGETATION**

### **FLORISTIC COMPOSITION**

Adilabad ranks second among all the districts in the state in terms of forest area. The district forests are occupying about 40 per cent of the total geographical area. Adilabad district lies within the tropical deciduous belt which occupies a large part of Peninsular India. The forests of the district fall broadly into three categories according to Champion and Seth (1968) are Dry deciduous Teak forest. According to Sharfuddin Khan (1953) the forests of Adilabad are considered under forests of Godavari Valley,

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Category – a: Mixed Teak type as well drained slopes, with rich deep loam. Southern dry mixed deciduous forest and Dry deciduous Scrub forests. Locally the forests are sub classified by state forest department as Teak forest (teak over 30%) Mixed teak type (teak 10 to 30%) and Mixed type (teak 10%) depending on the abundance of teak in the forests. In the first (teak type) category *Tectona grandis* forms almost as a sole crop. This type is represented by a good straight growth of teak stumps ranging from 15 to 20 meters in height and from 1-1.5 meters in girth at breast height. On well drained slopes rich with deep loam the teak may be represented to the extent of 30% to 50% or even more, occasionally tending to form pure and gregarious formations. On alluvial and dry shallow soils with poor drainage the percentage of teak goes down appreciably and that of the miscellaneous species increases. Sandy loamy clay soils support a luxuriant growth of mixed forests with abundance of teak and its associates. The common trees are *Aegle marmelos*, *Anogeissus latifolia*, *Boswellia serrata*, *Buchanania angustifolia*, *Dalbergia latifolia*, *Diospyros melanoxylon*, *Garuga pinnata*, *Haldina cordifolia*, *Holoptelia integrifolia*, *Lannea coromandelica*, *Madhuca indica*, *Mitragyna parvifolia*, *Morinda tomentosa*, *Phyllanthus emblica*, *Polyalthia cerasoides*, *Pterocarpus marsupium*, *Schleichera oleosa*, *Soymida febrifuga*, *Strychnos nux-vomica*, *Terminalia bellirica* etc. Trees of *Terminalia arjuna* are found along rivulets and streams in the forest. *Barringtonia acutangula* is seen along the streams in Bheemaram reserve forest in Mancherial division. When the underlying rock is a sandstone *Chloroxylon swietenia*, *Soymida febrifuga* are commonly found on the rocky and bolary soils and also on the laterite gregarious patches *Xylia xylocarpa* may be encountered. All the species mentioned above constitute the top storey. The lower storey consists of *Albizia odorotissima*, *Butea monosperma*, *Cassia fistula*, *Cassine glauca*, *Cleistanthus collinus*, *Cochlospermum religiosum*, *Gardenia gummifera*, *G. latifolia*, *G. resinifera*, *Holarrhena pubescens*, *Ixora parviflora*, *Limonia acidissima*, *Miliusa tomentosa*, *Nyctanthes arbor-tristis*, *Polyalthia ceraspodes*, *Terminalia chebula*, *Wrightia tinctoria*, *Ziziphus xylopyrus* etc. *Dendrocalamus strictus* which forms the under storey is abundant in Kagaznagar, Jannaram and Mancherial divisions. In other divisions it is seen as patches interspersed with arboreal associations. There is greater abundance of shrubby undergrowth and that of woody climbers in mixed forests having lesser percentage of teak, in rich teak forests their frequency of occurrence is considerably reduced. The common shrubs in these forests are *Alangium salvifolium*, *Annona squamosa*, *Cassia auriculata*, *Catunaregam spinosa*, *Combretum albidum*, *Dichrostachys cineria*, *Dodonaea viscosa*, *Grewia hirsuta*, *G. tiliifolia*, *Helicteres isora*, *Maytenus emarginata*, *Mimosa intsia*, *Mimusops hexandra*, *Pavetta indica*, *Premna tomentosa*, *Vitex negundo* and *Woodfordia fruticosa*. The woody climbers that are met with in the forest are *Abrus precatorius*, *Bauhinia vahlii*, *Butea superba*, *Calycopteris floribunda*, *Cryptolepis buchani*, *Derris scandens*, *Ichnocarpus frutescens*, *Mucuna pruriens*, *Olex scandens*, *Rivea hypocrateriformis* and *Wattakaka volubilis*. *Tamarix troupii* locally called as Penpa or Laljhan is common in the sandy river beds of Godavari and its tributaries. Scrub forest vegetation is found on denuded hill slope soils particularly the soil brought by erosion. The following species are found growing like *Acacia nilotica*, *Scilla indica*, *Cassia auriculata*, *Dodonea viscosa*, *Mimosa intsia*, *Prosopis chilensis*, *Vitex negundo*, *Woodfordia fruticosa* and *Ziziphus* species. Herbs are commonly seen after the onset of monsoon and disappear by the beginning of winter. The common herbs that are seen in the forests are *Aerva lanata*, *Chlorophytum tuberosum*, *Curculigo orchoides*, *Curcuma decipiens*, *Cyathocline iyrate*, *Desmodium dichotomum*, *D. velutinum*, *Enicostema littorale*, *Polygala elongate*, *Tacca leontopetaloides*, *Uraria picta* and *Zornia gibbosa* etc. Herbaceous climbers that are encountered in the district are *Canavalia gladiata*, *Cocculus hirsutus*, *Dioscorea bulbifera*, and *Holostemma ada-kodien*. The grasses that are encountered in the forest are *Aristida adscensionis*, *A. setacea*, *Chloris dolichostachya*, *Chrysopogon aciculatus*, *Cymbopogon coloratus*, *C. martinii*, *Dichanthium filiculme*, *Eragrostiella bifaria*, *Heteropogon contortus* and *Oplismenus burmannii*. The notable parasitic species found in the district are *Cassytha filiformis*, *Cuscuta reflexa*, *Dendrophthoe falcata*, *Striga asiatica* etc. *Orobanche cernua*, a parasite on crops like

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*Nicotiana tabacum* is seen as a parasite also on *Solanum melongena*. Pteridophytic plants are relatively few in the district, they usually occur near canals, streams and also in rock crevices in forests. *Marsilia quadrifolia* is seen in ponds, puddles, rice fields etc., while *Actinopteris radiata*, *Adiantum incisum*, *Adiantum lunulatum* and *Christella dentata* are confined to shady moist, rocky places in the forests.

### MINOR FOREST PRODUCTS:

Collection of minor forest products are the one of the major livelihoods of the tribal communities of the district. Tribals seasonally collect various fruits, leaves, gum, honey and raw material of medicinal plants. The major species like *Acacia leucophloea*, *Albizia odoratissima*, *Albizia lebbek*, *Anogeissus latifolia*, *Bombax ceiba*, *Boswellia serrata*, *Cochlospermum religiosum*, *Gardenia gummifera*, *Gardenia resinifera*, *Sterculia urens*, *Lannea coromandelica*, *Prosopis cineraria*, *Pterocarpus marsupium* and *Soymida febrifuga* are collected by Gonds and Pardhans to sell in the local market to get additional income. Leaves of *Diospyros melanoxylon* are one of the major forest products for the locals which are collected in all the people during summer. The leaves of *Diospyros melanoxylon* are used to wrap beedis by the rural women in the district. Leaves of *Buhinia vahlii* and *Butea monosperma* are used to make meal plates by the locals. Local tribal use certain stem fibers to make rope particularly species of *Bauhinia racemosa*, *Eriolaena hookeriana*, *Hardwickia binata*, *Crotalaria juncea*, *Borassus flabellifer*, *Cocos nucifera*, *Helicteres isora* are used mostly by them. *Bambusa arundinacea*, *Dendrocalamus strictus* and *Vitex negundo* species to make fencing around their houses and cattle sheds and also used to weave bamboo baskets. Tribals use species like *Imperata cylindrical*, *Phoenix sylvestris*, *Sida acuta*, *Thysanolaena maxima* and *Typha species* to make broom sticks to use and sell in the local market.

### TRIBAL COMMUNITIES OF THE DISTRICT

Adilabad is known for its significant forests and Adivasi forest dwellers which include various tribal communities existing since centuries and has a strong social, historical and cultural background. The tribal community of Adilabad district includes primarily Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras. A brief account of their communities is given below.

#### KOLAMS

They are predominantly found in the tribal areas of Adilabad district. They live in interior forests of the district; they also live in the neighbouring states of Madhya Pradesh and Maharashtra. They call themselves as 'Kolavar' in their dialect. 'Kola' in their dialect means bamboo or stick. As they prepare baskets with bamboo, they might have been calling themselves as 'Kolavar'. Their literacy rate in the district is pretty low. They speak their own dialect called Kolami. The main occupation of Kolams is agriculture and their subsidiary occupations are agriculture labour and basket making. In earlier days these people were experts in curing diseases through herbal medicines. Each Kolam household used to render service by giving herbal medicines to 5-10 Gond families in the villages. They cultivate Jowar, black gram, cotton, red gram sunflower etc. Jowar is their staple food. The present study includes one village consisting exclusively of Kolams, called Kolam Kothagudem in Utnoor Mandal in Adilabad District. The four tribal groups predominantly living in Adilabad District namely Gonds, Kolams, Pardhans and Thotis maintain healthy and respectful relationship with each other. Although inter-tribal community marriages do not take place they maintain friendly relations. There are villages where Gonds and Kolams live as neighbours peacefully.

#### NAIK PODS

The other important aboriginal group in this district is the Naikpods. Naikpods are referred to by the Gonds as Mache. They have a language of their own, like the Kolams, but in the area of the study that they all speak Telugu and consider Telugu as their mother tongue; they also know Gondi, which is the lingua franca among all the aboriginal groups. Naikpod clan names bear no similarity to the Gond or Kolam model, and inter- marriages are not allowed. Their clan and lineage names are the same as those of

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Telugu speaking communities. Naikpods practice cultivation; they have now taken up plough cultivation, though they tend to be less successful than the Gonds. They live in small hamlets on stonier ground. Now few large Naikpod villages in the valley bottoms have been entirely taken over by non-tribal people, and the tribals remained as landless labourers. Their traditional occupation is making of bamboo mats for a variety of purposes. Unlike a relationship of mutual cooperation between the Gonds and Kolams, there is a competition and resentment between Gonds and Naikpods; the Gonds often refer to Naikpods as thieves and untrustworthy, whereas Naikpods assume greater purity than Gonds because they do not eat beef and pork. Both parties refuse to accept cooked food from each other and recognize this refusal. Each assumes a higher status. On the whole the Gonds avoid entering a Naikpod hamlet. But the Naikpods being numerically less dominant and often doing bamboo work for the Gond often enter Gond villages, where they forced to accept an inferior status. Generally both Gonds and Naikpods are cultivating groups and therefore equivalent, but the Gonds are relatively wealthier.

### **PARDHANS**

Pardhans are closely linked with each individual Gond clan is a lineage of Pardhans, bards and chroniclers, who play a vital role in the worship of the clan deity and many other ritual activities. The Pardhans, the guardians of Gond tradition and religious lore are though themselves not Gonds and of a social status lower than that of their Gond patrons, are nevertheless the recent deflection of their interests and energy to other enterprises will undoubtedly have an adverse effect on the preservation of Gond traditions. The most important of these three groups are the Pardhans, as they call themselves as Pataris (as they are called by the Gonds). The symbiotic relationship between communities of Gonds and Pardhans has been established by centuries of their co-existence. The Pardhans are the hereditary bards of the Gonds. They have a clan and kinship system that is an exact replica of that of the Gonds and each Pardhan household is bound by a patron-client relationship similar to that of a *jajman* to a number of Gond households of its own clan. Pardhans receive yearly payments and dues at specific rites of passage from their hereditary patrons or *dhani*. While the Pardhans' mother tongue is Marathi, they are guardians of Gond oral tradition and ritual music, which they sing in Gondi. The Pardhan is often called upon as an arbiter of Gond custom, and another has seen Pardhans, on their own initiative, object to infringements of Gond marriage regulations, their operation is dependent on their role as messengers and arrangers of clan rituals among the clan group, which is dispersed across the entire area of Gond population. They are the maintenance men of Gond tradition.

### **GONDS**

This tribal group generally inhabits in their own settlements. In the past they were believed to practice slash and burn cultivation (podu cultivation). Today, most of them are agricultural laborers and supplement their income by non timber forest produce. Gonds are one of the numerically dominant tribal groups in India. They speak Gondi dialect. They are found in larger areas of central India, know after them as gondwana. Important sub divisions among Gonds are Muria Gond, Maria Gond (found in Madhya Pradesh), Raj Gonds and Durve Gonds (found in Maharashtra, Andhra Pradesh and sparsely in Orissa). All these sub divisions call themselves as Koitur in their dialect. In Andhra Pradesh, Naikpod is mentioned along with Raj Gonds in the approved list of Gonds. Monogamy is the general rule among but some rich people may more than woman. Pre-marital and extra marital relations are prohibited. Marriages within the phratry are taboo. Cross-cousin marriages are encouraged but marriage with one's own sister's daughter is prohibited. The socially accepted ways of acquiring mates among Gonds are Marriage by negotiations, Marriage by Service, Marriage by capture and Marriage by intrusion, The god in Gondi dialect is known as pen and their supreme God is persapen. Each phratry is having its supreme God. Two important ceremonies are observed in the months of Bhave (April- May) and pus (December

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January) in honour of persapen of each phratry. Similarly each clan or sub clan (khanda) members observe annual feasts and rituals in honor of their clan deities. Important deities worshipped by Gonds are Akipen (village deity), Nat Aawal (village Mother). Siva Aawal or Dasuri Aawal (mother goddess), Polam Rajul (deity of hills and forest), gouri pen (goddess of tiger) and Dodi make (mother of cowshed). Gonds do not eat the fruits or new food grains or vegetables without praying to their deity. They also perform festivals before they cut teak wood or leaves. Males among Gond tribe perform robust dance called 'Dandari' during Ashada (June-July) on full moon day and festive occasion. Both males and females perform 'Demsas' Dance during marriage ceremonies. There are five varieties of Dandari Dance viz., Gusadi, Gummela, parra, tappal and kodal, Gusadi is performed by all Gonds irrespective of phratry or clan affiliation but the other four patterns of dance by members of specific phratry only. Gummela is performed by members of four divine brother groups, Kodal by six divine brother groups and tappal by seven divine brother groups. The traditional village councils are very strong and powerful in Gond village. Inter village councils called Raya Sabha are functioning in Gond village and each one settles inter village disputes of group of 10 to 20 villages members of Raya Sabhas. Traditional village councils used to maintain Grain Golas (Grainbanks) in respective village's food grains in times of need. Gonds subsist on agriculture and agricultural labour. They grow jowar, cotton, red gram, black gram, green gram etc.

### **THOTIS**

Thotis form a sizeable population in the Tribal Community of the district. Thotis living in the districts of Adilabad, Karimnagar, Nizamabad and Warangal in Andhra Pradesh are listed as Scheduled Tribes. According to 2001 census their population is 3,654. The total literacy rate among Thoti as per 2001 Census reports is 29.48. Thotis are recognized as Primitive Tribal Group. Thoti tribe is divided into four exogamous phratry just as saga of Gonds. All the phratry or sagas are sub divided into exogamous clans. Among Thotis clan name precedes the personal name and is treated as surname. Every clan is strictly exogamous. Monogamy is generally practiced by Thotis. Widow marriages are permissible. The mother tongue of Thotis is Gondi. Gonds call the Thotis as 'Birdal' (receiver) and latter call the former as 'Dhani' (Donar). The traditional occupation of Thotis is acting as bards to their Gond patrons and women practice tattooing, but presently majority of Thotis are earning their livelihood as agricultural and casual labourers. The political organization at the village level among Thoti tribe is known as 'Panch'. It consists of Patla, Mahajan, Devari, Ghattiyal and Havaldar.

### **CHENCHUS**

The population of Chenchus in the district is 40,869 as per 2001 census. The total literacy rate among them is 17.68 out of which male literacy rate is 24.90 and females are 10.11 as per 2001 census. Their mother tongue is Telugu. The chenchu tribe is divided into a number of exogamous clans which are prefixed to their names. Some of the clans found among Chenchus are 'Mandli', Chigurla', Udathala', 'Tokala', 'Mekala', Bhumani, Katraju, Arthi, Dasari etc. Family is nuclear. A very few joint families are also found. They collect varieties of roots, tubers, wild fruits, edible leaves etc., and consume them. They are non-vegetarians but abstain from eating beef. The traditional house of a chenchu is a small conical or ablong hut with wattle walls and thatched roof. Goats, sheep, buffaloes and cows are the domestic animals and there may be plough bullocks with cultivating families. Chenchus are adept in honey collect from honey combs perched on the mountain cliffs and caves. It is significant to note that in this arduous task of honey collection, the Chenchus choose only brothers-in-law and not own brothers in view of the existence of levirate system of marriage. They also collect minor forest produce items like gum, tamarind, myrobalans, nuxvomica, honey-was, mohwa flowers, chironji, soap nuts, broom-sticks etc., and sell them to Girijan Co-operative Corporation. The measures of social control are practiced among chenchus through a council of elders of the village and are headed by a man called 'Peddamanishi'.

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Chenchus generally state that Peddamanishi is always succeeded in office by his eldest son but they also admit that this rule is by no means always followed and that any sensible man may become Peddamanishi even if there is a son to the deceased holder. The disputes among Chenchus are generally settled by the traditional council. A new born child is named on the fourth day and the tonsure ceremony is performed when the child is three or four years old. A ceremony is performed when a girl attains puberty. Death pollution (sushti or muttu) lasts for three to fifteen days and is terminated by performing the Peddavidasam ceremony. They observe ancestor worship annually. They worship and believe in many deities and spirits both malevolent and benevolent and follow all Hindu festivals. Their religious pantheon include Mysamma, Rakta Veeradu, Onti Veeradu, Peddamma, Lingamaiah, Mallanna, Narasimhaswamy, Pothuraju, Nagamaiah Sunkulamma, Manthanalamma, Ankamma etc. The 'Chenchu' tribe is declared as 'Primitive tribal group' in 1975.

### **MATHURAS**

The tribe of Mathura is like Lambada. Tribal people but their hair style is peculiar to observe these hair style would be like a boat, which it is very convenient to carry any thing keeping on their head very easily though they live far away from modern civilization, however due to changing in their way of life such as, dressing and language even today they follow their own tradition and festival, they have habit of looking after their pet animals in their cottages. Mathuras otherwise known as "Yadavas." They are specialized in treating all types of wounds, injuries and fractures affected to animals.

### **OJHAS**

This tribe is confined to a mere packet of northern part of Adilabad district particular in the Osegaon village and its surrounding forest locations of Jainur Mandal. They are known for their craftsmanship in brass and metal works and popular in the district. This Ojha community migrated from Bastar region of Chattisgarh state. They are also very popular in the usage of herbal medicine.

### **THE STRUCTURE OF TRIBAL MEDICINAL SYSTEM**

Tribal medicine is practiced since centuries by the aboriginal community world. Tribal medicine differs from modern medicine. It is practiced in multi healing methods of treatment of drug and is based on belief and taboos. The primitive man learnt this art of healing; the knowledge is passed on from generation to generation through oral tradition. Knowledge of tribal medicine is incorporated in all the traditional systems of medicine such as Ayurveda, Siddha, Unani, Homeopathy, and Tibetan and Chinese medicine. The tribal medicine is based totally on secrecy and belief. The tribal medicinal practices and the use of drugs vary from region to region. The classification of tribal drugs can be roughly done as shown in the chart. Tribal doctor believes that diseases can be cured through magic and religious ceremonies. The Gonds worship the nature god such as Perasa pain, Ali pain, and Avil pain. Avil the tribal doctor is also called as 'Deavali' by the tribes.

### **DISCUSSION**

#### **NON-MEDICINAL USES OF PLANTS**

Tribes of Adilabad district use forest produces for various purposes other than medicinal plants such as food, fiber, fuel, gum, oils, broom sticks, toys, agricultural use, building huts, fodder for animals, flowers use in the festivals to offer and decorate gods and goddess, marriages, birth and death ceremonies, belief and taboos etc. The same is discussed under various categories as described below.

#### **i) WILD FRUITS, SEEDS AND NUTS**

Tribal communities of Adilabad district, collect wild edible fruits seasonally which are available in the local forests. To overcome the food shortage of tribal people they use forest resources for food which



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include wild fruits, vegetables, tubers and nuts etc. which are greatly contribute to their nutrition and diet. Among the tribal communities in the district, Gonds and Kolams are highly depend on forest produces particularly collection of wild fruits, nuts, seeds to get food and earn income as well. Tribal communities collect seasonally available fruits, seeds and nuts from time to time from the forest and store them for future requirements that includes the plant produces of *Aegle marmelos*, *Anacardium occidentale*, *Annona reticulate*, *Annona sqamosa*, *Borassus flabellifer*, *Bridelia retusa*, *Buchanania axillaris*, *Buchanania lanzan*, *Careya arborea*, *Cassia fistula*, *Cissus vitiginea*, *Cordia dichotoma*, *Diospyros chloroxylon*, *Diospyros melanoxylon*, *Garuga pinnata*, *Gardena gummifera*, *Gradenia latifolia*, *Grewia tiliifolia*, *Limonia acidissima*, *Litsia glutinosa*, *Litsia glutinosa*, *Maba buxifolia*, *Mangifera indica*, *Schleichera oleosa*, *Semicarpus anacardium*, *Strychons potatorum*, *Syzygium cumini*, *Tamarindus indica*, *Terminalia alata*, *Xylia xylocarpa* and *Zizipus mauritiana*.

### ii) WILD TUBERS AND LEAFY VEGETABLES

Among the tribal communities of the district, Kolams and Gonds use seasonally available wild tubers and vegetables for home consumption to meet their nutrient requirements. During winter season they collect tubers like *Asparagus racemosus*, *Chlorophytum arundinaceum*, *Corallocarpus epigaeus*, *Curculigo orchioides*, *Dioscorea bulbifera*, *Dioscorea pentaphylla* and *Discorea alata*. In the rainy season they also use tender leaves of *Achyranthes aspera*, *Aegle marmelos*, *Aerva lanata*, *Balanites roxburghii*, *Commelina benghalensis*, *Emilia sonchifolia*, *Gymnema sylvestre*, *Limonia acidissima*, *Madhuca indica*, *Momordica charantia*, *Moringa concanensis*, *Oroxylum indicum*, *Phyllanthus emblica*, *Pupalia lappacea*, *Terminalia bellirica* and *Terminalia chebula* as leafy vegetables.

### iii) OIL SEEDS

Tribal communities extract oil from the oil seeds for edible and non- edible purposes. Edible oil plant species are *Arachis hypogea*, *Carthamus tinctoris*, *Helianthus annua*, *Gossypium herbacium*, *Guizotia abyssinica*, *Madhuca indica*, *Ricinus communis*, *Schleichera oleosa*, *Sesamum indicum*, where as non-edible oil species like, *Jatropha curcas*, *Pongamia pinnata* are used by the tribal communities for their traditional lamps and these oils are also used as biodiesel in the urban societies.

### iv) FODDER PLANTS

Tribal communities are completely depended on wild fodder species to feed their animals. Tree species are mostly lopped by the tribals to feed their cattle and goats. The species which are lopped for green leaves as fodder in the summer are *Acacia catechu*, *Acacia nilotica*, *Albizia lebbeck*, *Butea monosperma*, *Ficus tinctoria*, *Azadirachta indica*, *Ficus virens*, *Holoptelea integrifolia*, and *Mangifera indica*. During rainy and winter season species like *Bambusa arundinacea*, *Bauhinia recemosa*, *Cassia fistula*, *Gmelina arborea* and *Moringa concanensis* are used as fodder. Climber species like *Coccinia grandis*, *Pueraria tuberosa* and shrub species like *Ixora pavetta*, *Solanum xanthocarpum* are used in winter and rainy season as fodder. Herbs and grasses like *Achyranthes aspera*, *Asparagus racemosus*, *Boerhavia diffusa*, *Cassia occidentalis*, *Cocculus hirsutus*, *Dioscorea oppositifolia*, *Eclipta prostrata*, *Ipomoea carnea*, *Trianthema portulacastrum* and grass species of *Cynodon dactylon* were found to be used for their animals.

## ECONOMICALLY USEFUL PLANTS

### i) GUMS AND RESINS

Certain plant species will produce gum and resin which are collected by the tribal people of the district. The major species like *Acacia leucophloea*, *Albizia adoratissima*, *Albizia lebbeck*, *Anogeissus latifolia*, *Bombax ceiba*, *Boswellia serrata*, *Cochlospermum religiosum*, *Gardena gummifera*, *Gardena resinifera*, *Lannea coromandelica*, *Limonia acidissima*, *Prosopis cineraria*, *Pterocarpus marsupium* and *Soyimida febrifuga* are collected by Gonds and Pardhans and sell in the local markets to get additional income.

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#### ii) PAPER PLATES AND BEEDI LEAVES

Tribal communities largely depend on collection of minor forest products particularly leaves during summer and they would earn good income to support their families. The leaves of *Diospyros melanoxylon* are one of the major forest products which are collected by all the local people between March and June. The leaves of *Diospyros melanoxylon* are used to wrap tobacco/ tambaku called as beedis by the rural women in the district. It is one of the large scale businesses in the non-timber forest produce of the district, which runs in to millions of rupees. The local women folk use leaves of *Bauhinia vahlii* and *Butea monosperma* to make meal plates and earn some money to the family.

#### iii) FIBERS, BROOM STICKS AND FENCING MATERIALS

Local tribals use certain stem fibers 'to make ropes' particularly species of *Bauhinia racemosa*, *Eriolaena hookeriana*, *Hardwickia binata*, *Crotalaria juncea*, *Borassus flabelliformis*, *Helicteres isora*, are used mostly by them. *Bambusa arundinacea*, *Dendrocalamus strictus* and *Vitex negundo* species are used to make fencing around their houses and cattle sheds and also used to weave bamboo baskets. Tribals use species like *Phoenix sylvestris*, *Sida acuta*, *Imperata cylindrical*, *Thysanolaena maxima* and *Typha species* to prepare broom sticks for their use and also to sell in the local market to generate some money for their living.

#### iv) NIRMAL TOYS INDUSTRY

The artisans at Nirmal produce articles of artistic content and features reflecting the local animals, birds, fruits and vegetable which in appearance look as real as the natural pieces. Toy making is a well known industry. The 'Nirmal Toys' has a specific heritage tag popular for their ethnic beauty and aesthetic content throughout the country. Recently they are popular even in International market. Nirmal toys are made from the woods of *Givotia rottleriformis*, *Givotia moluccana*, *Gyrocarpus americanus*, and *Wrightia tinctoria*. They deserve yet another famous craft is 'Dhokra craft' popular along with Nirmal Toy industry in the district. This craft is practiced in villages like Ushagaon and Kasalguda of the district. The Dhokra casting artisans are living in this district since last 100 years and producing tribal ornaments Zoomorphic figures in particulars horses, elephants and birds.

### GOND FESTIVALS

Gonds are the worshipers of Janani the mother of creator. They love festivals. Gonds have their own priests known as Devari, who only perform all the festivals and religious functions of the community. Gonds often involve in festivals which come seasonally before or after crops harvesting. Gonds believe goddess of plague disease locally known as Marke. According to them every hill, river, lake, tree is also inhabited by a spirit. They say that the earth, water and air are ruled by the great number of deities which must be appeased by sacrifices. Animal sacrifice on the festival and religious occasions is the common practice among the Gonds.

#### a. GINJA PANDUGA

They celebrate a seed festival locally known as 'Ginja panduga', till then they do not touch or consume the flowers, seeds, pulses and fruits of wild plants like Mahua, Mango, Beans etc., and the first harvest of seed bearing pulses like *Canavalia gladiata* and *Dolichos lab lab* etc..

#### b. AKADI FESTIVAL

Gonds, Pardhans, Naikpods and Kolams celebrate a festival known as "Akadi festival" during the months of June and July. They perform this festival under the tree of *Tectona grandis* before onset of monsoon rains. They restrict them selves in using the forest produces till completion of their Akadi festival.

#### c. NAGOBA FESTIVAL

Tribals of Adilabad celebrate Nagoba festival which is specially to worship tigers to protect and save their animals at the time of grazing in the forest.

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#### d. PUTHAPILLA FESTIVAL

e. Gonds celebrate Puthapilla festival particularly to get good yields from the crops like *Sorghum bicolor*, *Cajanus cajan*, *Cucurbita maxima*, *Vigna mungo*, *Vigna radiata* and *Vigna unguiculata* etc. They perform this festival at the time of flowering season of above crops. They pray to their local gods and goddesses like Jaithuru, Thirumala Devi, Patel Penk, Persa pen, Jangubai pen, Aval pen, Aaki pen, Bheemal pen, Pharel pen, Naaraval pen and Lard Shiva etc to protect their crops from wild animals and pests.

#### f. MADAI FESTIVAL

Gonds celebrate a community festival known as Madai and it is one of the major festivals performed by them. Gonds settled in various parts of the country usually meet their relatives to perform this festival collectively. In the night they drink liquor made up of flowers of *Madhuca indica* locally known as Ippa Sara and enjoy dance along with the tribal music through out the night. Gonds worship Pharsa Pen locally known as Jalli Devara. The Gonds who are with Madai as surname usually perform this celebration during the month of May and worship their ancestors.

#### g. KESLAPUR JATHARA

Keslapur Jathra a popular ritual is also the important festival of the Gonds. In this festival they worship the snake deity called Nagoba, whose temple is situated in the Keslapur village of Indervelli mandal of Adilabad district performed by Government of T.S. This get together was introduced by Hemendorf (1942) to solve the problems of Tribal communities of the district related to social, administrative and law and order problems faced by the tribal face to face with the Government officials and tribal heads.

#### h. DIWALI FESTIVAL

At the time of Diwali festival (Aswayuja masam) Gonds involve in week long dance program locally known as **Gusadi dance**. It is the most famous dance performed by the Gonds wearing specific ethnic head gears decorated with the peacock feathers. The dancers wear cotton cloth around their waist and smear ash all over their body and beads made of animal hair and other important dance costumes.

### KOLAM FESTIVALS

#### a. AYAK FESTIVAL

Kolams celebrate festival of Ayak related to the deity Bheemana which is the principal deity of them. Kolams celebrate this festival in the month of December (Satti). At the time of this festival Kolams decorate walls of huts and cover their roofs with new straws of *Oryza sativa*. The god Bheemana is represented by a carved wooden idol made from wood of *Mangifera indica*. The idol is crowned with a bunch of peacock feathers. They decorate a pot with a belt of bells and they kept anklets and small dolls which were made up of mud. On a Thursday, Bheemana are brought and kept in the centre of the village in a small green leaves enclosure. On the first day a fowl or a goat is sacrificed. On the following day the relics of the deity are taken to a hill stream for bathing after bathing the deity is brought back in the evening for pooja. A buffalo is sacrificed; the meat of the sacrificed animal is cooked and eaten by all the people of the tribe, first meal are served to all the priests (Devari). Cooked grains of *Sorghum vulgare* and mixed with the meat of the sacrificed animals, goes around the village, small quantities of it is left in all the corner stones and comes back. The deity is taken to its original abode the following day. This festival lasts for three days and it is confined to Kolam tribes only. Apart from celebrating community festivals, these tribes also celebrate other common Hindu religious festivals like Ugadi, Bathukamma, Dussera, and Diwali festivals. According to one legend Bathukamma is a deity and a lover of flowers. Hence, wild flowers of *Cassia auriculata*, *Celosia argentea*, *Polycarpea corymbosa*, *Cucurbita maxima*, *Mollugo pentaphylla*, *Plucaria wightiana* and *Tagetus petula*, are used in the preparation of colorful Bathukamma. Flowers are arranged on a square wooden plank or a square bamboo frame with the size of frames tapering off to form a pinnacle on top. They resemble the shape of a temple 'Gopura'. A lump of turmeric is kept on top of the flowers. This little floral mountain is worshipped as Goddess Bathukamma.

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### PLANTS USED IN MARRIAGE CEREMONIES

Tribal communities of this district, use specific plant species for wooden pillars in the marriage ceremonies. The wood of *Boswellia serrata* is used to make wedding table (Pelli peeta) to sit bride and broom on it during marriage ceremony. Leaves of *Butea monosperma* are used to cover the pots filled with water and stem pieces of *Aristida adsensionis*. The poles of *Anogeisus latifolia*, *Tectona grandis*, *Acacia chundra* and *Chloroxylon swetenia*, are also used to make Paldal (pandiri). Leaves of *Azadirachta indica*, *Pongamia pinnata*, *Madhuca indica*, *Pterocarpus marsupium*, *Syzygium cumini*, *Mangifera indica*, and *Boswellia serrata*, are used to cover top of the Pandal (pandiri) as a sun shade. Leaves which used for sun shade are locally known as palaporaka particularly for marriage pandal. *Curcuma domestica* is used in the formation of a paste for improving the complexion of a bride. After the marriage ceremony groom and bride would go the sacred trees like *Azadirachta indica* and *Madhuca indica* which are believed as deity of Pochamma and perform ritualistic pooja.

### PROTOCOL FOLLOWED BY THE TRIBALS IN MEDICINAL PLANTS COLLECTION

Tribal healers follow certain norms while collecting plant parts to use in the drug preparation. The leaves of *Acalypha indica* are never plucked for medicine without having bath and worshipping the plant. Tribal healers believed the tree *Ficus bengalensis* as their mother; often they offer a wild fruit to the tree before plucking the parts like leaves, bark, fruits etc for medicine. Healers do 3 rounds of pradakhin around the *Ficus religiosa* before collecting plant parts from the tree. Healers never root out the tap root for medicine often they use aerial root for medicine so that the plant will survive and it will be used in the future. Healers when they use tubers in their drug preparation, they never remove the entire tuber from the ground they left some of the tubers inside the ground and cover with soil for the survival of the plant. The whole plant of *Vernonia cinerea* is collected by performing pooja a day before Pushyami nakshathram and is collected which is used generally in the preparation of an amulet to ward off evil spirit.

### PLANTS IN BELIEFS AND TOTEMS

Gonds keep a twig of *Calotropis procera* on their roofs of huts at the time of women having labor pains to get easy delivery. The plant specie like *Aegle marmelos*, *Musa sapientum*, *Cocos nucifera*, *Mangifera indica*, *Phyllanthus emblica*, *Terminelia chebula*, *Oryza sativa*, *Raphanus sativa*, *Cirtus aurantifolia* are never eaten before offering to the local gods and goddess by the tribal.

### PLANTS IN TABOOS

Tribal people have strong religious taboos on plants. Pardhan tribal groups do not like to grow *Citrus arantifolia*, *Carica papaya* in their front yards, they believe that if some one happens to see them early in the morning their whole day will be spoiled. Naikpods do not allow *Phoenix sylvestris* to grow beside their huts. Pardhan and Naikpods do not grow *Mangifera indica* in front of their huts. Tribal believe that 'evil spirits' reside on its branches of *Tamarindus indica* and *Ficus benghalensis* plants during mid days (12 Noon) and will not go their surroundings.

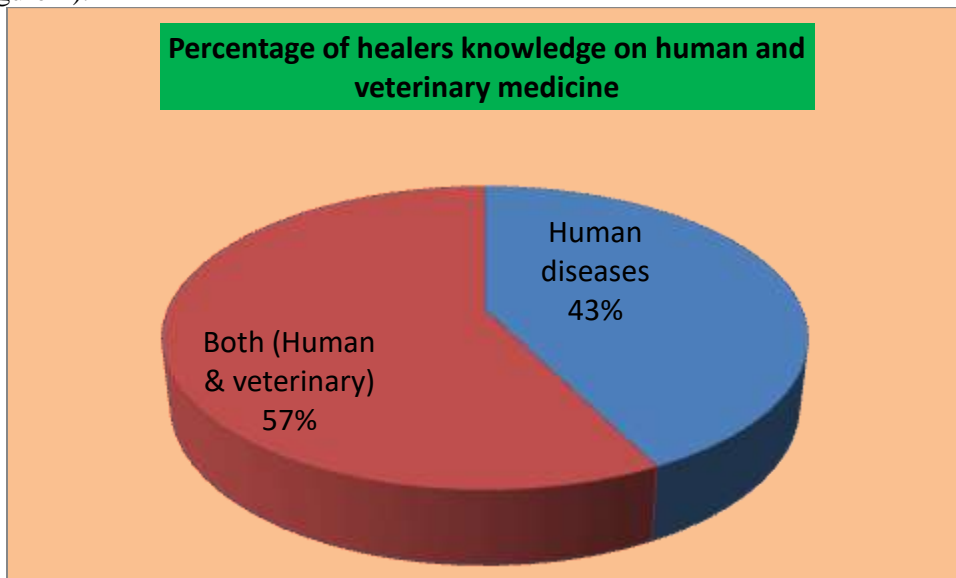
### PLANTS IN WORSHIP

Tribal communities of the district consider *Madhuca indica* as one of the sacred plants for them, they never cut down the tree even when it exists in the cultivated fields, and it provides food and medicine apart from its use for distillation of wine as well. *Prosopis cineraria* is worshiped to obtain success over enemies and to get devotee's wishes. *Ocimum sanctum* is usually planted in front of the Gond's houses. The species of *Achyranthes aspera*, *Aegle marmelos*, *Azadirachta indica*, *Butea monosperma*, *Calotropis gigantea*, *Cannabinus sativa*, *Clerodendrum indicum*, *Cynodon* sp., *Eclipta prostrata*, *Ficus benghalensis*, *Ficus glomerata*, *Ficus religiosa*, *Ficus retusa*, *Gmelin arborea*, *Lawsonia inermis*, *Mangifera indica*, *Pongamia glabra*, *Saraca indica*, *Streblus asper*, *Syzygium Cumini*, *Tamarindus indica* and *Tectona grandis* are also considered as pious sacred plants by the people in this district.

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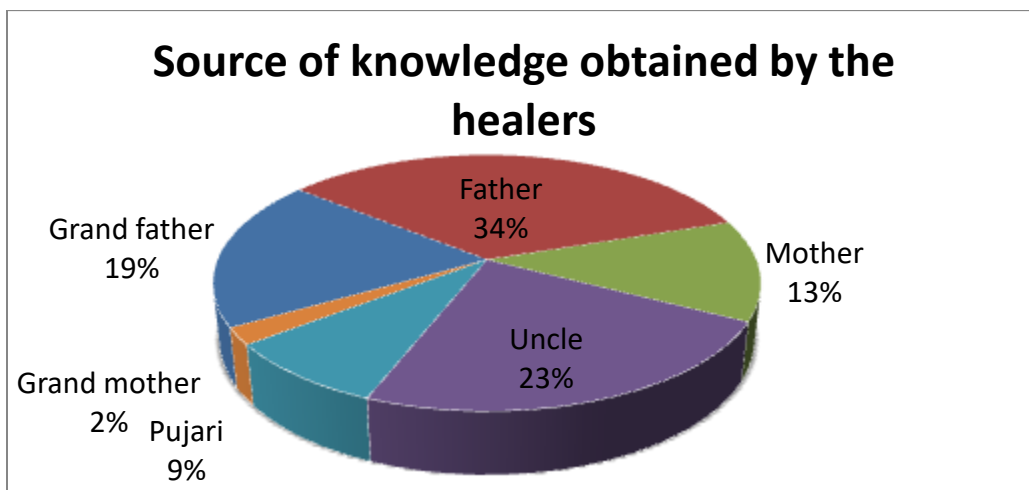
**TRIBAL HEALERS, THEIR KNOWLEDGE SOURCES**

During the study the author has met and interviewed a total of 47 tribal healers were interviewed, among the total healers 4 of them are women healers whom are specialized in treating child and mother health. Among the total healers about 43% of healers treat only human diseases and 57% of the healers have specialized in treating both animals and human diseases. There were no specialists for treating only animals (Figure-1).



**Figure 1**

The age groups of the healers fall between 40-80 years old. Of the total healers 34% of them gained knowledge from their fathers, 23% of them are acquired herbal knowledge from their uncles, 19% of the healers learned from grand fathers, 13% of the healers learned from their mothers, 9% of the healers learned from purjaris and 2% of them learn it from their grand mothers (Figure-2).



**Figure 2**

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#### STATUS OF HEALERS AND TRANSFORMATION OF THEIR KNOWLEDGE

Out of the 47 healers about 43 % of the total healers interviewed have not transforming their knowledge to their family members, while 26 % of healers are eager to transfer their knowledge to their sons. Interestingly 25% of healers are interested to teach their art of healing to those who are willing to learn and are interested to practice. 6% of the healers are sharing their knowledge particularly on veterinary medicine to others (Figure-3).

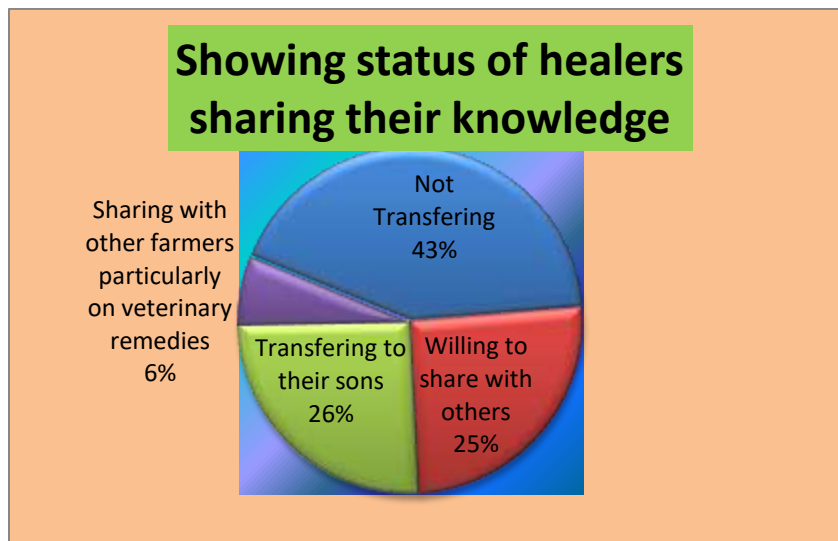


Figure 3

#### LIVELIHOOD OF THE HEALERS

Agriculture is the main occupation of all healers for their livelihood, their subsidiary occupations are agriculture labour, animal rearing, basket making, bamboo weaving and selling forest products in the local markets. 80% of the healers extended their services including medicine with free of cost, while 20% of them do not demand for any fees if patients offers then only they accept, it is observed that some times healers ask patients to bring additives like pepper, jaggery, salt, chilies for the preparation of the medicine.

#### HERBAL PHARMACOLOGY AND DRUG ADMINISTRATION

The preparation, mixing of drug or medicine intended for human or veterinary uses by tribals have reached perfection in the art of medicine preparation. Of the total 357 recorded medicinal preparations during the study, about 90% of the herbal medicines are prepared from single plant (or plant parts) and rest are prepared by using two plants and some times more than two plants (multiple drug preparation). Use of additives like black pepper, dried zinger, salt, clove, zeera, mishri, honey and jaggery with main drug is quite a common practice by the healers. They believe that herbal medicine will not work without these additives, particularly black pepper. Medicines are prepared in several forms by the healers such as fresh juice by squeezing fresh materials, mixtures, pills, decoctions, paste, ointments, medicated oils, powders etc. Healers predominantly use fresh plant materials like leaves, barks (of roots and stems), tubers, rhizomes either to make juice, paste and decoction. Fresh juice of plants (drug) is prepared either adding water or cow milk or goat milk. Healers mostly use leaves in the form of paste or juice to human as well as veterinary ailments. Healers prefer to use fresh medicinal herbs; in absence of them they use even dried or preserved herbs and their parts.

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### DAY SPECIFIC TREATMENTS

Healers follow their own customs during their treatments. It is interesting to note that Kolam and Naikpodu healers prefer treating diseases on a particular day of the week. Healers who treat infertility problems would provide medicine only on Fridays and Sundays. In case of treating the women patients for infertility problem the medicine will be administered on second menstrual day only.

### POPULARITY OF TRIBAL TREATMENTS AMONG RURAL-FOLK (IMPACT FACTOR OF TRIBAL MEDICINE)

Tribal medicine or herbal medicine is an age old medicine practiced by the man from time immemorial and was practiced from generation to generation through trial and error methods and purely based on beliefs and secrecy. The plants used in this system are easily available in abundance in our surroundings. The mode of preparation is simple. The administration of the drug is also easy, without any side effects. These qualities attracted people around the world. People all over the world are still depending on the traditional plant based healing practices, it is cheap and easily available. Tribal communities who live in the forest areas are totally depend up on locally available medicinal plants to take care of their health and tribal medicine has become an integral part of their culture. Even today 60-90% of the tribals are dependent on tribal medicines for human health care as well as veterinary health care problems. This shows that the social impact of the herbal drug is found to be profound and still play a major role in their lives subsequently in the society. The Primary Health Care (PHC) of the tribals in Adilabad district is mostly depended on use of traditional herbal medicines. The Impact Factor is found to be 70-90% under Human health care and 60-80% under Veterinary Health Care is recorded. This can be considered as a very important Social Impact Factor (SIF) influenced by herbal plants usage in the day to day lives of the tribals. Rural folk living in the surrounding villages of the forest areas of Adilabad district and in other towns of the district heavily depend up on the herbal medicine first, they approach the tribal healers to cure their ailments. As of today the healers are still in possession of tremendous ancestral traditional knowledge on medicinal plants present in their surroundings. Even today 50-70% of the rural folk are dependent on tribal medicines for human health care as well as veterinary health care problems. This shows that the social impact of the herbal drug is found to be profound and still play a major role in their lives subsequently in the society. The Primary Health Care (PHC) of the rural folk in Adilabad district is mostly depended on use of traditional herbal medicines. The Impact Factor is found to be 60-70% under Human health care and 50-60% under Veterinary Health Care is recorded. This can be considered as a very important Social Impact Factor (SIF) influenced by herbal plants usage in the day to day lives of the rural folk.

### SACRED GROVES

Sacred groves (SGs) are small groves that are specific places which are protected and conserved by the local communities as being the sacred residences of local deities and sites for religious and cultural rituals. They serve as valuable store houses of biodiversity. They are part of biological heritages and systems that has helped to preserve the representative genetic resources existing for generations. Sacred groves are the important places in which biodiversity is preserved in mostly undisturbed condition because of certain taboos and religious beliefs. Sacred groves are ancient natural sanctuaries that have supported the growth of several interesting and rare species of flora and fauna of the past. In the district many centers are considered under sacred grove category. For example the temple area of Jainath, situated in Jainath, a small village 21 Kms from Adilabad, the temple area of Basara-Saraswati, Ginnedhari of Tiryani mandal, Keslapur a remote village of Indervelli mandal, the area of Kunthala Waterfalls, the area of Pochara water falls, Mahagoan of Bhainsa mandal, Narnoor of Narnoor mandal, Dankanapally of Tiryani mandal, the temple area of Sadalpur, an ancient Temples of Lord Bhirava and Mahadeva located at just 37 kms away from adilabad and Sirichelma of Ichoda mandal are known as places of sacred groves. In the above sacred groves species like *Achyranthes aspera*, *Aegle marmelos*,

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*Azadirachta indica*, *Butea monosperma*, *Calotropis gigantea*, *Cannabibus sativa*, *Clerodendrum indicum*, *Cynodon* sp., *Eclipta prostrate*, *Ficus benghalensis*, *Ficus glomerata*, *Ficus religiosa*, *Ficus retusa*, *Gmelina arborea*, *Horduem vulgura*, *Lawsonia inermis*, *Madhuca indica*, *Mangifera indica*, *Ocimum sanctum* *Pongamia glabra*, *Prosopis cineraria*, *Saraca indica*, *Streblus asper*, *Syzygium jambolanum*, *Tamarindus indica* and *Tectona grandis* are commonly found in this district.

### **TRIBALS AND BIODIVERSITY CONSERVATION**

Biological diversity that is seen today is the result of millions of years of evolutionary process. Diversity is measured in terms of genetic diversity (diversity within the species), species diversity (diversity at species level), and ecosystem diversity. Conservation of Biological diversity is essential in order to sustain the life of human beings as well as other forms of life. Human race has been dependent on plants both for their material needs and emotional needs since its evolution. The tribal communities understand all these as life sustaining resources. Therefore they not only utilize them but also conserve them. Erosion of either of this diversity would greatly affect the human kind. Hence, both the biological and cultural diversity should be considered as a unit for a meaningful conservation. Tribal communities follow well balanced and judicious conservation methods for medicinal plants by applying the strict restrictions to be followed by everybody in the community in the form of taboos or totems or worship or rituals etc., for the posterity.

### **URBAN INFLUENCE ON TRIBAL COMMUNITIES**

During the study period the author has observed that the tribes are slowly influenced by modern society's maladies in the recent past. This has been conformed by the tribal healers during the interaction with the author. They observed that younger generation is influenced by attractions of urban society, further they also observed that middle aged people in their communities are suffering from arthritis and diabetic and hypertension which was not seen in the older generation particularly people of 70-80 years age. Recently a study published by National institution meantaring bureau (NNMB) and National Institute of Nutrition of nutrition (NIN) and Indian Council of Medical Research (ICMR) in the month of June, 2012 in Hyderabad has released a report on "Diet Nutritional Study of Tribals of India". The report observed that many Adivasi (Tribal) in the country suffer from hypertention, overweight, obesity problems both in tribal men and owmen in the states of Gujarath, Odisha, Kerala, West Bengal, Karnataka, Maharashtra, Madhya Pradesh, Tamil nadu , Andra Pradesh and Telangana state.

### **CONCLUSION AND SUGGESTION**

Biodiversity forms the backbone of viable ecosystems on which we depend for our basic necessities, security, and health. The present study detailed that the tribes have knowledge of medicinally important plant and their use in various diseases. The tribes depend on herbal practices in and around the forest area. The tribal's using of plants and knowledge of practice has come down through generations. There is a need to support indigenous practices of use of medicinal plants with a vision of conservation and community development. Valuable herbal practices have been practiced by tribale community since a long period. The tribals utilize number of plants in rituals, festivals and other ceremonies. The other facets of human well being, such as health, economic and political security can influence the value of biodiversity. The conservation of the knowledge of the traditional medicinal practice by the tribal communities of Adilabad district must be taken up on top priority basis by the State and Central governmental agencies. Telangana - State Biodiversity Board must initiate to conserve this traditional knowledge in the form of Traditional Knowledge Register (TK Register) for Adilabad district. In the light of recent ongoing International convention of parties – (COP) – IX meeting held at Hyderabad on conservation of Biodiversity (CBD) during 1<sup>st</sup> October to 19<sup>th</sup> October 2012, this small scientific work on Tribal life – their primary Health care will be a suitable contribution by the authors and is dedicated to the Tribal society of Adilabad.



### Review Article

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## **ETHNOMEDICINAL PLANTS USED IN TOUCH THERAPY AT ADILABAD DISTRICT OF TELANGANA STATE**

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### **ABSTRACT**

Plants used by tribals in touch therapy have been enumerated. Touch therapy is an old practice among the tribals and other rural people in district of Telangana state. In this therapy locally available plant species are used for the prevention of the diseases. Adilabad is known for its significant forests and Adivasi forest dwellers which include various tribal communities existing since centuries and has a strong social, historical and cultural back ground. The tribal community of Adilabad district includes primarily Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras were contacted and the information on 40 species belonging to 30 families from different pockets was documented. This knowledge has not been recorded earlier from the reported site.

**Keywords:** *Ethnomedicine, Touch therapy, Tribals, Adilabad*

### **INTRODUCTION**

Touch therapy is an interesting method of treatment of ailments practiced by, among others, the Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras tribals of Adilabad. The tribals believe that when a plant or plant part is made to touch the body or placed near the sufferer, it cures the disease. The method of treatment is suggested as more a magic than treatment and is called as magical cure of diseases (Jain 1963). They have a very good knowledge about the plant wealth. Documentation of traditional knowledge through ethnobotanical studies is very important for conservation and utilization of indigenous people's knowledge. Initial studies in the last 50 years have been primarily devoted to the preparation of inventories of plants of a certain region or specific ethnic groups. Many scientists, naturalists and thinkers from outside the community of ethnobotanists, started emphasizing the importance of ethnobotanical inquires and explorations.

### **MATERIAL AND METHODS**

The authors conducted extensive field survey in different remote areas. Intensive field work was undertaken by the author for a period of five years from January 2007 to December 2011. Ethnomedicinal information was gathered from herbal medicine practitioners, 'guniyans', experienced old men and women of different tribal communities. The information recorded from one area has been cross checked and confirmed from that obtained from another area. The species were identified with the help of floras. The present study is aimed at the preparation of an inventory of plants and their medicinal uses practiced by tribals in Adilabad district, related to the traditional medicinal practices of local tribal communities such as Kolams, Naikpods,

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Pardhans, Gond, Thotis, Chenchus and Mathuras to achieve the following objectives viz., 1) To record the traditional medicinal practices of the Tribal communities of Adilabad district. 2) Botanical identification and herbarium preparation of the plants used by them. 3) To record the methodology followed by them in diagnosis during administration and curing of the diseases. 4) To document the scientific data for future reference/studies. 5) To study the other non-medicinal uses of the plants such as food, fodder and other uses.

Ravishankar (1990) On “Ethnobotanical studies in Adilabad and Karimnagar districts of Andhra Pradesh, India, Madhu (2010) submitted his thesis on “Ethnobotanical studies in Adilabad forest area medicinal plants and community”. Later on Ravi Shanker and Henry (1992) were published a note on the medicinal plant wealth of Adilabad district. Previous authors had done some exploratory studies on ethnobotany of the district; Dr. Koppula Hemadri (1994) published Shastravettalanu Akarshistunna girijana vaidyam. In the above studies inventories of medicinal plants used for human ailments were documented from few localities. Vedavathy, S; Mrudula, V & Sudhakar, A: Tribal Medicine of Chittoor District, Andhra Pradesh (India), Herbal Folk Research Centre, Tirupati, 1997. Pullaiah *et al* (1998) reported Ethnomedicinal plants of the district and they provided scientific and vernacular names for each species. “While Mubeen *et al.* (2004-2005) prepared an inventory of important medicinal plants of Adilabad district of Andhra Pradesh. Swamy and NSNS (2008) reported some ethnomedicinal plants used by tribes in the Nirmal forest division Adilabad District of Andhra Pradesh. The study aimed to record some interesting ethnomedicinal plants available and which are practiced by surrounding local adivasis of Nirmal forest division for their health care.

### Enumeration

The species, arranged alphabetically by their botanical names, are enumerated in Table-1. Family, local name, Parts used and uses of plant parts in contact therapy as reported by local inhabitants are included

**Table 1: List of Ethnomedicinal Plants Used in Touch Therapy**

S. No	Botanical name	family	local name	Uses
1.	<i>Abrus precatorius</i> L.	Fabaceae	Guruvinda	A piece of root is tied around the ear opposite the affected part of the ear to cure dental carries
2.	<i>Abutilon Indicum</i> (L.) Sweet	Malvaceae	Tuturubenda	Root is collected on a Saturday in early morning and is tied to the waist of the pregnant woman to prevent miscarriage. It is also used to prevent bad dreams
3.	<i>Achyranthes aspera</i> L	Amaranthaceae	Uttarani	Root is collected at the time of solar eclipse; ad is tried to the arm or hung around the neck to relieve all types of fever.
4.	<i>Aegle marmelos</i> (L.)	Rutaceae	Maradu	Root is collected on <i>Sankranti</i> in early mornig. It is tried to the arm to prevent cholera.
5.	<i>Allium cepa</i> L.	Liliaceae	Vallulli	Children suffering from nasal bleeding are asked to inhale the smell of the bulb of the plant.
6.	<i>Argyreta nervosa</i> (Burm. f.) Boj,	Convolvulaceae		The upper surface of the leaf is bandaged over the boil to get suppuration
7.	<i>Asparagus racemosus</i> Willd.	Liliaceae	Shatavari	A small piece of root is tied around the ears to relieve vertigo due to excessive heat.
8.	<i>Barleria prionitis</i> L	Acanthaceae		Root is hung at the door of cowshed to protect cows from contagious diseases

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9.	<i>Butea monosperma</i> (Lam.)	Fabaceae	Modugu	Root is collected on a Saturday and it is tied to the arm of woman to get rid of barrenness
10.	<i>Calotropis procera</i> (Ait.) R.Br.	Fabaceae	Gilledu	Root is collected on a Saturday and it is tied to the arm of woman to get rid of barrenness
11.	<i>Careya arborea</i> Roxb.	Barringtoniaceae	budaburija	Fruit is believed to be a snake repellent. Stem fibre is tied to the waist to cure 'Dhuda' (a form of diarrhea) in case of infants.
12.	<i>Cissampelas pareira</i> L.	Menispermaceae	adavibankath eega	After applying mustard oil on the leaf, it is shown to the fire and then fomented over boils to get suppuration.
13.	<i>Clitoria ternatea</i> L.	Fabaceae	Shanku pushpi	A small piece of root (white variety) is tied to the right ear of the patient to cure headache
14.	<i>Corchorus capsularis</i> L.	Tiliaceae	parantalikura	Root is collected on a Sunday in early morning. It is tied to the waist of the baby to stop baby from crying.
15.	<i>Crateva Magna</i> (Lour.) DC	Capparaceae	Ulmiri chettu	A leaf is kept on the ear of the mother to expel out the retained placenta.
16.	<i>Dendrophthoe falcate</i> (L.f.)	Loranthaceae	Badanika	Plant growing on a Neem tree ( <i>Azadirachta indica</i> ) is collected during lunar or solar eclipse. It is tied to the arm to prevent bad dreams. Again, when this plant is growing on a Bel tree ( <i>Aegle marmelos</i> ). It is collected during solar eclipse and tied to the waist of the patient to relieve hysteria
17.	<i>Diplocyclos palmatus</i> (L.) Jeffrey	Loranthaceae	Lingadonda	Plant growing on a Neem tree ( <i>Azadirachta indica</i> ) is collected during lunar or solar eclipse. It is tied to the arm to prevent bad dreams. Again, when this plant is growing on a Bel tree ( <i>Aegle marmelos</i> ). It is collected during solar eclipse and tied to the waist of the patient to relieve hysteria
18.	<i>Elephantopus scaber</i> L.	Asteraceae	Enugutamara	A small piece of root is tied to the arm to prevent bad dreams. The root is collected on a Sunday early morning.
19.	<i>Euphorbialigularia</i> Roxb.	Euphorbiaceae	Akujamudu	A small piece of root is inserted into the vagina of a pregnant woman to induce abortion
20.	<i>Evolvulus nummularius</i> (L.)	Convolvulaceae	Chitti elukachevi-aku	Whole plant is tied around the head to get sound sleep
21.	<i>Ficus racemosa</i> L.	Moraceae	Ravi	Root is collected on a Saturday in the early morning from the east of the plant. It is tied on the ear with a thread opposite to the affected part to relieve dental carries
22.	<i>Helicteres isora</i> L.	Malvaceae	adavichamant hi	A Fruit is hung around the neck of the patient to relieve post delivery pain
23.	<i>Hemidesmus indicus</i> (L.)	Sterculiaceae	sugandhipala	A small piece of root is hung around the neck to cure fever
24.	<i>Lehocarpus frutescens</i> (L.) R.Br	Apocynaceae		A necklace of stem pieces is worn to cure rheumatism.
25.	<i>Jasmiun arboresces</i> Roxb	Oleaceae	Adavi malli	Flowers are collected in the early morning. The smell of the flower is inhaled seven times to cure headache.
26.	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Thummi	Root is collected on a Saturday or Sunday in the early morning, which is worn on the neck to cure cough, It also cures asthma and stomach disorder

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27.	<i>Mimosa pudica</i> L.	Mimosaceae	Athipathi	Root is collected on a Saturday or Sunday in the early morning. It is tied around the neck of children to cure cough and also used to ward off the snakes.
28.	<i>Mucuna pruriens</i> (L.) DC	Fabaceae	Atti patti	Root is collected on a Saturday or Sunday in the early morning. It is tied to the arm of male partner for prolonged sexual intercourse.
29.	<i>Oroxylum indicum</i> (L.)	Fabaceae	Dhundillum	A fruit is hung at the main door of house or a necklace of seeds is tied around neck to prevent contagious disease from affecting children
30.	<i>Phoenix sylvestris</i> Roxb.	Arecaceae	Ita	7 leaflets together are made to touch the whole body to relieve pain due to black bee sting, bee sting and wasp sting.
31.	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Chitramula	Mustard oil is applied on the leaf and warmed. It is applied on the leaf and warmed. It is fomented on boils to get suppuration.
32.	<i>Pongamia pinnata</i> (L.)	Fabaceae	kanugu	Root is collected on a Saturday. It is tied to the waist or children to cure syphilis.
33.	<i>Premna serratifolia</i> L.	Verbenaceae	Thakkadu	Root is collected on a Saturday or Sunday in the early morning from the east of the plant. It is tied to the waist to cure rheumatism
34.	<i>Saraca asoca</i> (Roxb.)	Verbenaceae	Asoka	Root is collected on a Saturday or Sunday in the early morning from the east of the plant. It is tied to the waist to cure rheumatism.
35.	<i>Semecarpus anacardium</i> L.f.	Anacardiaceae	Adavimaidi	After making a hole in the fruit. It is tied to the affected part with a cow's hair to cure filarial. A necklace of fruits is hung around the neck of a mother cow for more lactation.
36.	<i>Spondias pinnata</i> (L.f.) Kurz	Anacardiaceae	Adavimamam idi	A fruit is hung around the neck of children to cure mouth ulcer
37.	<i>Stereospermum chelonoides</i> (L.f.) DC	Bigoiaceae	Pisul	A necklace of seeds is worn to cure headache.
38.	<i>Tamarindus indica</i> L.	Caesalpiniaceae	Chinta	Seed is made to touch the affected part to relieve pain due to scorpion sting
39.	<i>Terminalia arjuna</i> (Roxb. Ex Dc.) Wt. & Arn.	Combretaceae	Thella maddi	Root is collected on Saturday or Sunday in the early morning. It is tied to the waist to cure intermittent fever.
40.	<i>Terminalia chebula</i> Retz.	Combretaceae	Karakkai	A seed is tied to the arm or a necklace of seeds is worn to prevent small pox.

**Conclusion**

This paper reports forty-seven (47) ethnomedicinal uses of forty (40) plant species (belong to thirty (30) families) found in Adilaba district. Tribals believe these plants to have supernatural powers and collect them on specific days like: Saturday, Sunday, solar eclipse, lunar eclipse and *Sankranti*, and other tribal festival etc. The plants are worshipped by the collectors (who could be the traditional healer or the medicine man or at times the sufferer as well). During the collection of the plant parts the collector has to kneel down before the plant and pray to the jungle goddess to allow him to collect plant parts for medicinal use. The plant parts are also worshipped.

Before their use in touch therapy, or during the process of touch therapy, either the medicine man or the sufferer is to kneel down before his deity many such deities worshipped in some places in

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the form of icon, but mostly symbolized through stone or a shape of wood and light Dhup. Then the plant part is tied to the arm or the waist or the affected part with a thread. This magico-religious belief attracts people both from the rural and urban areas. It is strongly believed by the people that the administration of the medicine in this method ensures its maximum effectiveness.

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## TRADITIONAL BOTANICAL KNOWLEDGE OF SOME MEDICINAL PLANTS OF ANANTAGIRI HILLS IN VIKARABAD, VIKARABAD DISTRICT, TELANGANA STATE, INDIA

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### ABSTRACT

India is endowed with a rich biological heritage. It has more than 53 million tribal people under 300 tribal communities, constituting about 8% of the total population of the country. The tribal knowledge regarding the uses of plants for various purposes indicates their general awareness and intimate dependence on the surrounding. The relevance of local herbal health traditions have not diminished despite the giant strides made in the field of modern medicine. The most surprising fact is that, even today, 75% of the world population belonging to developing countries are still dependent on traditional medicine for their care. Anantagiri Forest constitutes an important, non-renewable living resource. So there is an urgent need to protect the rich biological diversity and heritage of Anantagiri forest. Proper measures must be taken by the government to utilize the rich resources without harming the environment. The present study is aimed at knowing about the rich medicinal plants present in and around Anantagiri hills used by local herbalists and village folklore to cure various human ailments. The major families which occupied first and second position were Mimosaceae-12sp Euphorbiaceae-9sp, and all 149 plant species belonging to 57 families were documented and authentically identified.

**KEYWORDS:** Biodiversity of Anantagiri Hills, Rangareddy District, Human Medicine, Telangana

### INTRODUCTION

The very name Ethno botany indicates that it is an interdisciplinary science. The word 'ethno' means a group of people sharing common origin, culture, language, customs, beliefs, traditions, etc., and 'botany' is the study of plants. Thus, Ethno botany is a hybrid term, with anthropological approach to plant science. For Ethno botanical study, there should be close working relationship between botanists, ecologists, anthropologists, chemists, soil scientists, pharmacologists. While botanists are required to identify the plants, the others are required for ecology and environment, for gathering the data of the plants used by the ethnic groups, for phytochemical analysis, for noting down the details of soil and for testing the efficacy of native drugs. Since Ethnobotany has socio-economic impacts, its relevance in modern times is established particularly with the problems of conservation of ecosystem, population control, rural health, nutrition, drug usage and abuse and cottage industries – all turned to the economic uplift, there is a shift in ethnobotanical studies from descriptive to analytical type. The Ethnobotanically unexplored regions, regarding plant resources are now out with large amount of information. The present paper is aimed and planned to fulfil the lacuna of this information with regard to medicinal plants

in this area. The survey of the potentiality of the medicinal plants in and around Ananthagiri is a beautiful hill which is 6 km away from Vikarabad town of Ranga Reddy District of Telangana, which is 75 km from the Metropolitan city of Hyderabad.

### **Study Area**

The present surveyed area for medicinal plants at Ananthagiri Hills and its environs falls under Rangareddy District of T.S. which lies between 160.30' and 180.20' of North latitudes and 770 .30' of East longitudes. The total geographical area of the District is 7493 sq. kms with 1055 villages and 14 towns with a population of 25.52 lacks, and is most urbanized districts of T.S. The district has 37 mandals and 3 revenue divisions. The district has a poor forest cover and consists of Ananthagiri, Mahammadabad, Gungurthy, Adikcherla, Mothkupally, Nagupalli, Raskam, Pashapur and Dharur reserve forests.

### **Hill range**

The district is mostly hilly with poor forest cover (only 0.7% of the total area). The general slope of the land is from West to East and South-East. There are two major hill ranges viz., Ananthagiri hill range and Rajkonda hill range. The average elevation of the hills is 509.91m.

### **Types of Soils and Minerals**

There are three major soil types in this region and comprises of red earths, loamy sands (Dubba), Sandy loams (chalka), and sandy-clay loam and black soils comprising clay loams, clays, silting clays etc., and the third type of soils of mixed nature, consisting of Quartz deposits followed by Felspar clay, amephyrat and laterite, at Tandur which is 36 kilometres away from study area and comprises of rich lime stone deposits (containing 173 million tons) of high quality cement grade lime stone.

### **Climate**

The climate is characterized by a hot summer of long duration and generally a dry weather, except during south-west monsoon season. The average annual rain fall is about 802mm. Which is comes from south-west monsoon during June to September. May is the hottest month with mean daily temperature at 400 C, however the temperature will come down during monsoon period. Decrease in temperature in day and night is seen during the month of December is the coldest month (130 C).

### **Flora**

The flora of the district exhibits and xerophytic adaptations 42.5% of the land is under cultivation of various crops. The hills and the slopes are generally covered by dry deciduous forests. The forests do not have commercial value. The forest area comes about only 10% of the total land area. The high density of population resulted in stress, as the area is nearer to the capital city Hyderabad.

### **Rivers**

The Musi is the chief river of the Rangareddy district and is also called as Muchikunda, which arise at near Ananthagiri hills at a place called as Bugga which is 2 kilometres away from Lord Anantha Padmanabha temple, the river flows



Eastward via Vikarabad Mandal and passing through the Hyderabad metropolitan city, and enters into Nalgonda District and joins the River Krishna at Vadapally Village. Another small river is Kagna River that rises in the hill range of Ananthagiri and flows to North-Westwards and floods the entire Tandur Mandal.

## MATERIALS AND METHODS

The work was undertaken for about a period two years starting from June' 2010 to the end of May' 2012. The work is mainly confined to Ananthagiri Hills and its environs covering about a radius of 35 kms, which comes under Vikarabad reserved forest. The main aim of the survey is to prepare a list of medicinal plants present in and around Ananthagiri hills used by local herbalists and village folklore to cure various human ailments. The areas covered are Ananthagiri hills particularly at Ananthapadmanabha temple and its surroundings, followed by villages of Ananthagiripalle, Godhumaguda, Kerelli, Dharur, Durgamchervu, Nagasanipalle Tanda, Mohammadanpalle, Velichala, Mothukupalle, (Reserved forest), Narsimhuni gutta, Gattukesaram, Kondapur and Ramaiahguda.

The data presented here is collected by frequent field visits by the author to these areas once in two months for about a period of two years. The information on medicinal properties of plants is gathered from various sources such as consulting the local village heads, elderly people, Vaidyas, and other herbal practitioners. Help from Forest department personnel including DFO-Vikarabad and his associates were taken during the survey.

## ENUMERATIONS

In the enumeration, the family and taxons are arranged alphabetically. Ethno botanical uses of some medicinal plant parts used by tribes for some disease.

Table 1

S.No	Botanical Name	Family Name	Traditional Alimnt
1.	<i>Abrus precatorius</i> Linn.	Fabaceae	Root powder is taken orally along with cow's milk to treat scorpion sting and snakebite.
2.	<i>Abutilon indicum</i> L.	Malvaceae	Leaf juice and root are taken orally to treat dental problems.
3.	<i>Abutilon indium</i> (L.) Sweet.	Fabaceae	Leaf paste is applied over the spot of scorpion sting.
4.	<i>Acacia catechu</i> (L.f.) Willd.	Fabaceae	The stem bark of <i>Acacia catechu</i> and tips of <i>Holoptela integrifolia</i> are ground to paste and applied on the wounds for eight days.
5.	<i>Acacia chundra</i> (Roxb. Ex Rottl.) Willd.	Mimosaceae	Stem bark extract (1 tablespoonful) is administered with goat milk for 4 days, with a day gap after every dose for asthma. Bark is kept in the home for get rid of fear (Evil spirit).
6.	<i>Acacia farnesiana</i> (L.) Willd.	Mimosaceae	Fruit powder is given orally with milk for dogbite.
7.	<i>Acacia leucophloea</i> (Roxb.) Willd	Mimosaceae	Paste of fresh stem bark is applied topically to treat cuts and wounds.
8.	<i>Acacia nilotica</i> (L.) Del	Fabaceae	Dried stem bark powder mixed with camphor and ghee applied on wounds.
9.	<i>Acacia nilotica</i> (L.) Willd. Ex Del.	Mimosaceae	Bark powder is applied along with oil for burns.

10.	<i>Acacia pennata</i> (L.) Willd.	Mimosaceae	Stem bark along with that of <i>Semecarpus anacardium</i> (each 100 g) are pound and the extract is given orally for 3 days for fits (Somma, Murcha)
11.	<i>Acalypha indica</i> L.	Euphorbiaceae	Leaves with salt and turmeric are ground to powder and mixed with sesame oil, applied on the patches of ring worm infection. Leaf paste is applied topically to treat skin diseases.
12.	<i>Achyranthes aspera</i> L	Amaranthaceae	Leaf paste is applied topically to treat cuts and Wounds.
13.	<i>Acorus calamus</i> L.	Araceae	Dried rhizome is ground in water and the paste is given orally to children for clarity of speech.
14.	<i>Adhatoda vasica</i> Nees	Acanthaceae	Leaves are ground with the flowers of <i>Hibiscus rosa-sinensis</i> and taken orally to treat asthma.
15.	<i>Aegle marmelos</i> Corr.ex.Roxb	Rutaceae	Leaf paste is applied topically to heal wounds. The pulp of fruit is given with water to children suffering with dysentery.
16.	<i>Aerva lanata</i> (L.) Juss. Ex Schult	Amaranthaceae	Juice of whole plant is taken orally to treat cough, sore throat and wounds. Leaf juice is instilled in ears.
17.	<i>Alangium salvifolium</i> (L.f.) Wang	Alangiaceae	Fruits are eaten for loss of appetite for Anorexia. Stem bark extract and leaf paste are applied as plaster for bone fracture.
18.	<i>Aloe vera</i> L.	Liliaceae	Sap mixed with oil is heated and the mixture is applied on hair for hair growth and good sleep.
19.	<i>Ampelocissus latifolia</i> (Roxb.) Planch	Vitaceae	200 ml of stem juice is administered orally once a day for 2 days for Anorexia
20.	<i>Andrographis paniculata</i> (Burm.f.)	Acanthaceae	Wallich ex Leaf paste is applied topically at the bitten site of snake; beetle and sorption. Powdered leaf is mixed with cow or goat's milk and taken orally to treat diabetes.
21.	<i>Anodendron paniculatum</i> (Roxb.) DC.	Apocynaceae	Bark extract is bandaged for bone fracture.
22.	<i>Anogeissus latifolia</i> (Roxb. Ex DC.) Wall. Ex Guill. & Perr.	Combretaceae	Bark extract (4 tea spoons) along with pepper (2 tea spoons) is given twice a day for 10 to 15 days for asthma.
23.	<i>Asparagus gonocladus</i> Baker	Liliaceae	Tuber is eaten for fertility.
24.	<i>Asystasia gangetica</i> (L.) T.Anderson	Acanthaceae	Leaf powder is mixed with coconut oil and applied topically to healwounds (burns).
25.	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Leaf paste is applied topically on the body to treat small pox, rheumatism and skin diseases. The young twigs are used as toothbrush to develop strong teeth.
26.	<i>Blumea mollis</i> (D.Don) Merr.	Asteraceae	Leaf smoke is inhaled for cough.
27.	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Root paste is applied topically to treat hydrocele.
28.	<i>Bombax ceiba</i> L.	Bombacaceae	Bark extract is given orally to increase sperm count.
29.	<i>Boswellia serrata</i> Coleb.	Burseraceae	Gum is applied over the bitten area for dog bite.
30.	<i>Buchanania lanzan</i> Spreng.	Anacardiaceae	Gum and rice are pounded and the powder is administered for 3 or 4 days for chest pain.
31.	<i>Calotropis gigantean</i> (L.) R. Br.	Asclepiadaceae	Latex drops (3 or 5) mixed with sesame oil (2 spoons) are instilled in ears (2 or 3 drops).
32.	<i>Canavalia virosa</i> (Roxb.) Wt. & Arn.	Convolvulaceae	Leaves extract is applied on the affected part once daily for three days for ring worm.

33.	<i>Capparis sepiaria</i> L.	Capparaceae	Bark and neem bark (1:4) are crushed and the extract is given orally for 2 days after menstruation for contraceptive.
34.	<i>Capparis zeylanica</i> L.	Capparaceae	Root bark is ground with water, boiled and taken orally to treat indigestion and also roots made into an amulet; it is believed to infuse occult powers (Evil spirit).
35.	<i>Caralluma umbellata</i> Roxb.	Asclepiadaceae	Pulp of the young plants is applied over the burned parts.
36.	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Root is boiled with oil and applied on head before bath to treat throat infection and headache.
37.	<i>Careya arborea</i> Roxb.	Lecythidaceae	Infusion of flowers is given after childbirth to heal ruptures.
38.	<i>Cassia absus</i> L.	Caesalpiaceae	Seeds are ground into paste and applied topically to treat skin diseases and headache.
39.	<i>Cassia auriculata</i> L.	Caesalpiaceae	Flowers are crushed and mixed with goat's milk and taken orally to prevent white discharge in women and seed powder with honey is taken orally for diabetes.
40.	<i>Cassia occidentalis</i> L.	Caesalpiaceae	Leaf paste is applied topically to treat scabies and to heal bone fractures.
41.	<i>Cassine glauca</i> (Roxb.) O. Kuntze	Celastraceae	Roots tied to wrist to keep-off evil spirits.
42.	<i>Catharanthus roseus</i> G. Don.	Apocynaceae	Whole plant is powdered and mixed with cow's milk and taken orally to treat diabetes.
43.	<i>Ceriscoides turgid</i> (Roxb.) Tirveng.	Rubiaceae	Bark juice is administered for diarrhoea.
44.	<i>Chamaesyce hirta</i> (L.) Small	Euphorbiaceae	Whole plant is pounded with salt and turmeric and applied as cream for boils, blisters & cuts.
45.	<i>Chomelia asiatica</i> (L.) Kuntze.	Rubiaceae	Root juice along with garlic is instilled in nose for fits (Somma, Murcha).
46.	<i>Cinnamomum verum</i> Presl.	Lauraceae	Decoction of stem bark is taken internally to treat cough, dysentery and to keep the body cool.
47.	<i>Cissus quadrangularis</i> L.	Vitaceae	Paste of stem is taken orally for easy digestion. Tender internodes and leaves are pickled and eaten for Anorexia.
48.	<i>Citrus aurantifolia</i> (Christm.) Swingle. L.	Rutaceae	Decoction of leaves is inhaled to get relief from fever, headache and cold.
49.	<i>Cleome viscosa</i> L.	Capparaceae	Leaf paste is applied topically to heal wounds.
50.	<i>Clerodendrum inerme</i> (L.)	Verbenaceae	Leaf is ground in water and the juice is taken orally to treat fever.
51.	<i>Clitoria ternatea</i> L.	Fabaceae	Root powder is mixed with water and taken orally to treat indigestion, eye diseases and headache.
52.	<i>Coccinia grandis</i> (L.) J. Voigt	Cucurbitaceae	Leaf Juice is mixed with butter and applied topically to treat skindiseases. Leaf paste is applied to cuts and wounds.
53.	<i>Coldenia procumbens</i> L.	Boraginaceae	Juice of leaf is taken orally to prevent white discharge in women.
54.	<i>Coleus aromaticus</i> Benth.	Lamiaceae	Leaf juice is taken orally by children to treat indigestion and cough.
55.	<i>Costus speciosus</i> (Koenig) Smith	Vitaceae	Rhizomes are pound and 1 teaspoonful of juice is taken orally by tribals for abortion.

56.	Curculigo orchioides Gaertn	Hypoxidaceae	Tubers are dried and powdered and one teaspoonful is taken orally with milk one every day for aphrodisiac.
57.	Cynodon dactylon L. Pers.	Poaceae	Decoction of whole plant is taken orally to keep the body cool.
58.	Cyperus rotundus L.		Paste of dried tuber is applied on breast of women to secrete more milk and applied topically on bitten site of scorpion.
59.	Datura metel L.	Solanaceae	Few drops of leaf juice is poured into ear to treat earache.
60.	Dichrostachys cinerea Wight & Arn.	Mimosaceae	Leaf paste is applied to cuts.
61.	Dillenia pentagyna Roxb	Dilleniaceae	Stem bark pounded with ginger and peppers are applied as bandage.
62.	Diospyros peregrine (Gaertn.)	Dilleniaceae	Barke extract is taken orally for asthma
63.	Dodonoea viscosa (L.) Jacq.	Sapindaceae	Leaves pounded with turmeric are bandaged over the affected part of bone fracture.
64.	Drypetes roxburghi (Wall.) Hurusawa	Euphorbiaceae	Bark extract is given orally for cough.
65.	Eclipta prostrata L	Asteraceae	Leaf powder is mixed with coconut oil & applied on the hair regularly for healthy and black hair.
66.	Enicostemma axillare (Lam.) Royle	Gentianaceae	Whole plant is pounded and applied to boils.
67.	Euphorbia antiquorum Linn	Euphorbiaceae	Dried latex is taken internally in low dose to help free motion.
68.	Euphorbia hirta L.	Euphorbiaceae	The milky latex is applied topically to treat wounds and lip cracks.
69.	Euphorbia tirucalli L.	Euphorbiaceae	The stem is boiled with water and given to children to treat skin diseases.
70.	Ficus benghalensis L.	Mimosaceae	Stem latex is applied topically on heel cracks. Young stem is used as tooth brush.
71.	Ficus racemosa L.	Mimosaceae	Stem latex is applied topically to treat heel cracks.
72.	Ficus religiosa L.	Mimosaceae	Leaf powder is mixed with water and taken orally to get relief from body pain.
73.	Flacourtia indica (Burm.f.) Merr.	Flacourtiaceae	Bark juice is boiled in gingelly oil and the worm extract is applied to cuts.
74.	Gloriosa superb L.	Liliaceae	Bulbare pounded with garcin goat milk given in early pregnancy
75.	Grewia hirsute Vahl	. Tiliaceae	Roots are pounded and applied over for boils, blisters & cuts
76.	Gymnema sylvestre R. Br.	Asclepiadaceae	Leaf powder is mixed with cow's milk and taken orally to treat diabetes. The root powder is taken orally and also applied on the bittenspot to treat snake bite.
77.	Heliotropium indicum L.	Boraginaceae	Paste of whole plant is applied topically to treat wounds and skin affections.
78.	Hemidesmus indicus Linn. R. Br. Muell.	Asclepiadaceae	Juice extracted from the whole plant is taken internally to keep the body cool. Root juice is given orally for blood purifier.
79.	Hibiscus rosa-sinensis L.	Malvaceae	Paste of fresh leaves is applied on the hair for healthy and black hair.
80.	Holarrhena pubescens (Buch. Ham.) Wall. Ex Don	Asclepiadaceae	A pinch of bark is placed in the mouth to relieve cough.
81.	Holoptelia integrifolia (Roxb.) planch	Ulmaceae	Bark juice (1/2 glass) is given twice a day for a week.

82.	Hybanthus enneaspermus (L) Muell	Violaceae	Paste of whole plant is applied topically to treat cough. Whole plant dried and powdered. One teaspoonful is taken orally with milk every day twice for Aphrodisiac.
83.	Hymenodictyon orixense (Roxb.) Mabb.	Rubiaceae	Bark juice is bandaged for bone fracture.
84.	Lannea coromandelica (Houtt.) Merr.	Anacardiaceae	Stem bark pounded with turmeric are bandaged over the affected part.
85.	Lantana camara L.	Verbenaceae	A handful of flower is ground with coconut oil and applied topically on the head to get relief from headache.
86.	Lawsonia inermis L.	Lythraceae	Leaf powder is mixed with coconut oil and applied topically to treat cuts and wounds.
87.	Lepidagathis cristata Willd	Acanthaceae	Presence of one plant in home in every sunday is good for health
88.	Leucas aspera (Willd.) Link.	Lamiaceae	A bunch of leaves is boiled and the vapour is inhaled to cure head ache and fever.
89.	Lippia nodiflora Mich.:	Verbenaceae	Paste of leaves is applied topically to treat swellings and wounds.
90.	Litsea glutinosa (Lour.) C.B. Robins	Lauraceae	Bark juice is taken orally for maternal pain.
91.	Mangifera indica L.	Anacardiaceae	The latex from leaf and stem bark is used to treat heel cracks.
92.	Melochia corchorifolia L.	Sterculiaceae	Boiled leaf is taken as food to help in free motion.
93.	Merremia emarginata (Burm.f.) Hall.f.	Convolvulaceae	Decoction of the whole plant is taken internally to treat stomach problems.
94.	Mimosa hamata Willd.	Mimosaceae	Bark extract pound in cows' milks along with garlic is advised to men thrice a day for 3 days for increase in potency.
95.	Mimosa pudica L.	Mimosaceae	Leaf paste is applied topically to treat cuts and wounds. Root extract (2 spoons) given once a day for two days for diarrhoea.
96.	Morinda tinctoria Roxb.	Rubiaceae	Leaf juice is given orally to children before food for easy digestion.
97.	Moringa concanensis Nimmo ex Dalz. & Gibs.	Moringaceae	Stem bark extract (2 spoonfuls) is administered with sugar for 4 days for cough.
98.	Moringa oleifera Lam.	Moringaceae	The leaf is taken as food and it reduces body heat and to treat indigestion and eye diseases. Flower is taken as food and it gives chillness to eyes and increases sperm production in men.
99.	Mukia maderaspatana (L.) M. Roemer	Cucurbitaceae	Leaf powder is mixed with boiled rice and taken orally to treat cold and cough.
100.	Murraya koenigii (L.) Sprengel	Rutaceae	Juice of tender leaves is taken orally to arrest vomiting.
101.	Nerium oleander Sol.	Apocynaceae	Juice prepared from the stem bark is boiled with gingelly oil and two drops are poured into ear to treat ear pain.
102.	Ocimum sanctum L.	Lamiaceae	Tulsi Leaves are crushed with onion bulbs and the juice is taken orally to treat cough, cold and headache.
103.	Odina wodier Roxb. Fl.	Anacardiaceae	Juice of leaves is taken orally to prevent white discharge in women.
104.	Oldenlandia umbellata L.	Rubiaceae	The root paste is applied topically to arrest bleeding.

105.	Phyllanthus amarus Schum. & Thnn.	Euphorbiaceae	Fresh leaves are ground and mixed with a cup of cow or goat's milk and taken internally to cure jaundice.
106.	Phyllanthus emblica L.	Euphorbiaceae	Fruit powder is mixed with cow's or goat's milk and taken orally to treat cold and cough.
107.	Plumbago zeylanica L.	Plumbaginaceae	Root pound with garlic in milk is given to children for fits (Somma, Murcha).
108.	Polyalthia longifolia (Sonn.) Thwaites.	Annonaceae	Juice extracted from the fresh stem bark is taken orally to treat indigestion.
109.	Pongamia pinnata (L.) Pierre.	Fabaceae	Juice of root is mixed with equal amount of coconut milk, boiled and applied topically to cure wound and gastric trouble.
110.	Rauwolfia tetraphylla Linn.	Apocynaceae	Paste of the whole plant is mixed with castor oil and applied physically to treat skin diseases.
111.	Ricinus communis L.	Euphorbiaceae	The leaf juice is taken orally or washed leaves are tied on the breast to increase secretion of milk in women. The oil prepared from the seeds is applied on lower stomach to get relief from stomachache.
112.	Sansvieria roxburghiana Schult.	Liliaceae	Juice of warmed leaf is poured into ear to treat ear pain.
113.	Sarcostemma acidum (Roxb.) Voigt.	Periplocaceae	Columns grounded in goat milk and put as band for bone fracture.
114.	Schlelichera oleosa (Lour.) Oken:	Sapindaceae	Stem bark extract is applied over the chest twice a day till relieved of pain.
115.	Scleria corymbosa Roxb.	Cyperaceae	Root juice is given orally for blood purifier.
116.	Semecarpus anacardium L.	Anacardiaceae	Seed resin is applied over dogbite.
117.	Sida acuta Burn.	Malvaceae	Arival manai poondu Leaf paste is applied topically to heal cuts, wounds and to get relief from headache.
118.	Smilaxperfoliata Lour	Liliaceae	One tea spoonful juice of tubersis taken orally before sleeping.
119.	Solanum nigrum L	Solanaceae	Whole plant parts are taken as food to treat cough.
120.	Solanum surattense Burm.f	Solanaceae	Root extract (1 tablespoon) is given orally after 3 days of menstruation for 5 or 6 days for fertility.
121.	Solanum torvum Sw.	Solanaceae	Leaf juice is taken orally to reduce body heat.
122.	Solanum trilobatum L.	Solanaceae	Unripe fruits are prepared as curry or roasted in gingelly oil and taken orally along with food to strengthen the body. The leaf juice is taken orally to treat cough and itching.
123.	Spermacoce hispida L	Rubiaceae	The seeds are crushed into paste and taken orally to treat stomach problems.
124.	Sphaeranthus indicus L.	Asteraceae	Leaf, flower and seeds are ground into paste and applied topically to treat skin diseases and piles.
125.	Stachytarpheta jamaicensis Vahl.	Verbenaceae	Paste of stem and root bark is applied topically to treat dysentery.
126.	Strychnos nux-vomica L.	Loganiaceae	One table spoon (Bark extract) is given along with honey and ginger for dysentery.
127.	Syzygium cumini (L.)	Myrtaceae	Paste of stem bark is applied topically to treat swellings. The ripe fresh fruits are taken orally to reduce body heat.

128.	<i>Tamarindus indica</i> L.	Caesalpiniaceae	Dried fruits are taken orally to treat eye infections and fruit pulp is applied externally on affected part once daily till cured for cracked sole.
129.	<i>Tectona grandis</i> L.f	Verbenaceae	Leaf juice (200 g) and honey (100 g) are mixed and taken every day with milk for 40 days for elephantiasis.
130.	<i>Terminalia arjuna</i> Roxb.Ex. Dc Wight & Arn.	Combretaceae	Fruit paste is applied topically on wounds. Bark powder is boiled with water and inhaled to cure headache to kill worms in teeth. One tea spoon powder is given with one glass of water or cow/goat milk for three months for anaemic. Stem bark extract is given daily to strengthening the heart functions as a cardiac tonic.
131.	<i>Tinospora cordifolia</i> Miers.	Menispermaceae	Leaf paste is applied topically to treat wounds.
132.	<i>Toddalia asiatica</i> (L.) Lam.	Rutaceae	Leaf paste is applied along with pepper for boils, blisters & cuts.
133.	<i>Trianthema portulacastrum</i> L.	Aizoaceae	Decoction of roots is taken internally to treat Constipation and asthma.
134.	<i>Tribulus terrestris</i> L.	Zygophyllaceae	The fruit and root are mixed with boiled raw rice, taken orally to prevent white discharge in women and to treat urinary troubles. Ground 10 g seeds with 10 g dry roots of <i>Withania somnifera</i> to make powder. One tea spoonful powder is given internally daily with milk during bed time for 30 days for impotency.
135.	<i>Tridax procumbens</i> L.	Asteraceae	Leaf paste is applied topically on cuts and wounds
136.	<i>Trigonella foenum-graecum</i> L.	Fabaceae	Five gram of seeds is chewed to cure diarrhoea twice daily for two days.
137.	<i>Tylophora indica</i> (Burm.f.) Merr	Asclepiadaceae	Root juice is given orally for Asthma
138.	<i>Vanda tessellate</i> (Roxb.) Hook. Ex G.Don.	. Orchidaceae	Extract of white (velamen) roots (1 spoon) given once a day for 3 days for dysentery
139.	<i>Vitex negundo</i> L.	Verbenaceae	Leaves are boiled in water and the vapour is inhaled twice a day to get relief from headache, fever, cold, and cough.
140.	<i>Wattakaka volubilis</i> Cooke.	Asclepiadaceae	Leaf paste is applied topically to treat rheumatic pain, cough and fever severe cold.
141.	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Juice of tuber and milk is advised for females with no children.
142.	<i>Woodfordia fruticosa</i> (L.) Kurz.	. Lythraceae	Flowers are pounded in cow milk for blood purifier
143.	<i>Wrightia tinctoria</i> (Roxb.) R.Br.	Apocynaceae	Juice of seeds taken orally to treat indigestion.
144.	<i>Xylia xylocarpa</i> (Roxb.) Taub	Mimosaceae	With roots tied to hand, one can move in the forests, even at night, without the fear of evil spirits.
145.	<i>Zingiber officinalis</i> Rosc.	Zingiberaceae	5ml extract of fresh rhizome is given internally in the early morning for 3 days for cough. One gram rhizome is decocted along with 2 g of <i>Piper nigrum</i> 10g root bark of <i>Plumbago zeylanica</i> , 1 seed of <i>Semecarpus anacardium</i> in half litre water, 20 ml decoction is given internally by adding tea spoonful of cow ghee once daily for 3 days for Sexually transmitted disease.

146.	Zizyphus mauritiana Lam.	Rhamnaceae	Leaf and bark decoction is boiled and it is used to take bath to treat severe body pain. Dried bark powder is applied topically to treat wounds.
147.	Zizyphus rugosa Lam.	Rhamnaceae	Leaf paste is bandaged for bone fracture.

## DISCUSSIONS

The present study contains the first hand information gathered by the author for about 2 years. The major families which occupied first and second position were Mimosaceae-12sp and Euphorbiaceae-9sp, and all 145 plant species belonging to 57 families were documented and authentically identified. According to a report of the World Health Organization (WHO), three fourth of the World population cannot afford the products of the modern medicine and have to rely on the use of traditional medicine of plant origin (Rai et al, 2000). The herbal remedies mentioned are of certain general and specific ailments, such as snake bite, cough, and scorpion sting, head ache, back pain body pains, cold, dandruff, dog bite, fever, hair loss, jaundice, inflammation, joint pains, lice killer, skin ailments, ear pains, eye problems, red and white discharge in women, loss of semen in urine in men, tooth ache and gum problems, stomach ache, bone fractures, conception and menstrual problems and wound healing. The resource persons are mostly lambadas, chenchus and some elderly people of local villages. The people practice and cure almost all ailments or diseases or wounds very effectively with simple locally available plants without involving much financial commitment, in majority of the cases they treat freely. It revealed valuable information about the ethno medicine of the local tribals of Vikarabad in Rangareddy District.

## CONCLUSIONS

The country has a number of alternative medicines, like Ayurveda, Unani, Siddha and Homeopathic systems which are predominantly based on plant based raw materials in most of their preparations and formulations. Herbal preparations for various purposes including pharmaceutical and cosmetic form part of traditional biodiversity uses in India. India is one of the twelve mega biodiversity countries in the world representing 6.5 percent of world's know wildlife and 12 percent of plant life. Since the tribal people cannot afford the products of modern medicines, there is an urgent need to protect the medicinal plants to give the required treatment at affordable or cheap price.

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Dr. N Ramakrishna studied PhD from Osmania University. Experienced and motivational Botany lecturer studied in an array of Biology. Educator that also performed administrative duties of Department. Acted as Head of the Department and NSS officer and organised various camping programmes to bring youth face to face with the community and make efforts to improve their life.





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## **Traditional Study of Some Medicinal Plants of Leguminaceae Family In Adilabad District, Telangana State, India**

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### **Abstract**

Tribal medicinal practices of plant crude drugs for various ailments recorded from Adilabad District, Telangana State are presented. The particulars of plant parts used, mode of preparation and administration are given. The crude drugs, either single, bi- or as multi-component preparations are used for various ailments. This information provides immense potential for study of relationship of the active principles of the drugs with the ailments concerned. The plants of Adilabad District in Telangana region are well known for their medicinal properties. Several of the 31 Leguminous plants species presented in this paper need special attention on account of their restricted availability, threatened status and Ethnobotanical significance. This is of crucial importance in planning any meaningful conservation strategy. The medicinal plants in Adilabad District are distributed in a wide range of habitats including, forests, grassy localities, field margins, way side / roadside etc.

**Keywords:** - Medicinal plants, Adilabad, Leguminaceae, Tribal

### **Introduction**

India is thus endowed with the world's 12 richest biodiversity, cultural and traditional system in respect to medicinal plants. It has 16 agro climatic zones having 45,000 plant species of which 15,000 - 20,000 proved to have medicinal values. The rich flora is the potential strengths of India. The World Health Organization (WHO) in its document on health for all (2000) has indicated the role of traditional medicine in the Primary Health Care (PHC) of the people, even today 80% of world population belonging, developing countries are still rely on traditional medicine for their health care requirements. The (WHO) are declared 21,000 plants have medicinal uses. Health care in India is characterized by medicine pluralism, including self – care, consultation with traditional healers or primary health centers. This should be surprising when we realize that indigenous medicinal plants, India has a rich heritage of using medicinal plants in its different medicinal systems such as Ayurveda, Unani and Siddha as the highly diverse folk tradition<sup>11</sup>. About 8000 plants species, out of 17000 known vascular plants of India, have been documented to be in traditional medicinal use in India by the All India Coordinated Research Project on Ethno – Biology (AICRPE) of government. In India, The oldest record of

the use of plants as medicine is given in the Rig-Veda (4500-1600 BC), in which curative properties of some plants are described.

Then appeared the two important Indian systems of medicine viz; the Charaka Samhita (1000-800 BC) and Susruta Samihta (800-700 BC). As a result many new species have become a part of regular Ayurvedic medicine yet, uses of many species are confined to certain communities due to lack of ethno botanical studies. The legumes represent a very large and diverse group, ranging from small plants such as clovers to large trees such as *Acacia* species. This group is estimated to contain 15,000 to 18,000 species in about 750 genera, and most of those examined fix nitrogen in symbiosis with rhizobia<sup>1</sup>. These plants are cosmopolitan in distribution occupying a wide range of habitats. In India, legumes are represented by about 1152 species in 179 genera both indigenous and introduced<sup>2</sup>. Legumes are important source of food mainly from seeds which contain 25-50% protein, gums for cosmetics, fuel, fodder and medicine etc<sup>3</sup>. The plant specimens were identified using district, regional and state floras like Flora of Adilabad District<sup>4</sup> and important medicinal plants of Adilabad district of Andhra Pradesh<sup>5</sup>. Ethno botanical studies in Adilabad and Karimnagar districts of Andhra Pradesh, India<sup>6,7</sup>. The study aimed to record some interesting ethno medicinal plants available and which are practiced by surrounding local adivasis of Jannaram forest division for their health care.

### Study Area

Jannaram Forest Division lies in the Adilabad district, between latitudes 18<sup>0</sup>.55' 21'' and 19<sup>0</sup>.21' 5'' N and longitudes 78<sup>0</sup>.45' 10'' and 79<sup>0</sup>.14' 5'' E. The geographical area of the division is 925.27Km<sup>2</sup>, which is 5.7 % of the total area of the district. The Northwest corner of this division BirsaiPET plateau is 396m above mean sea level. This plateau is all adulatory and drains from either side, into Peddavagu, which runs across the plateau from North-East to South-West. The temperature varies from 15°C to 45°C and average annual rainfall of the 750mm received mainly from south-west monsoons. In the Kawal Wildlife Sanctuary about 30 seasonal streams are identified. The area serves as a catchment for many streams, which drain into Kaddam reservoir and Godavari River. There are a large number of small, medium and big tanks scattered throughout the division inside and outside the Reserve Forest.

INDIA



TELANGANA



ADILABAD



## Material And Methods

Intensive field work was undertaken by the author for a period of five years from January 2007 to December 2011. Locally well known herbal healers and poojaris belonging to Kolams, Naikpods, Pardhans, Gondas, Thotis, Chenchus and Mathuras tribal communities of the district, who are still practicing traditional medicine are identified. The author has visited nearly 30 habitations belonging to Bellampalli, Chinnur, Ichoda, Jaipur, Jannaram, Kerimeri, Sirupur (u), Tiryani, Utnoor and Wankidi Mandals. The author had also visited villages and habitations like Gondugudems, Naikapu gudems. Plants were collected in flowering and fruiting stages for the preparation of herbarium by following standard methods. Herbarium specimens were identified and accessed as per the norms laid down. The vouched specimens were deposited in the Herbarium, Department of Botany, Osmania University, Hyderabad, Telangana State. Observations of the plant species were made with respect to their location and other field characters<sup>8</sup>. The plant specimens were identified using district, regional and state floras like Flora of Adilabad district, Flora of the Presidency of Madras, and other relevant literature. The approaches and methodologies described have been followed systematically for Ethno botanical enumeration of the herbal treatments recorded in the present study. The traditional healers who are practicing traditional medicine were interviewed from time to time to recorded. Information was gathered regarding plants or their parts, preparation of the medicine, dosages, method of administration and described recipe for human records.

**Table 1. Some Leguminous medicinal plants used by Tribal of Adilabad District, Telangana State, India.**

S. No	Botanical name / Family	Vernacular name	Parts used	Preparation/Administration	Disease/Ailment
1.	<i>Abrus precatorius</i> L (Fabaceae)	Guruvinda, Gunj	Leaves	Handful of fresh leaves is ground with 5g fresh rhizome of <i>Curcuma longa</i> to make a Paste. It is applied on the affected part of the body once a day till cured.	Scabies
			Seed	Seed paste is applied externally once a day till cured.	Arthritis
2.	<i>Acacia catechu</i> (L.f.) (Mimosaceae)	Kachu, Babhul	Stem	The stem bark of <i>Acacia catechu</i> and tips of <i>Holoptela integrifolia</i> are ground to paste and applied on the wounds for eight days.	Wounds
3.	<i>Acacia nilotica</i> (L.) Del (Mimosaceae)	Nalla Thumma, Devbabhul	Stem	Take 20g stem bark powder and apply on burns along with oil.	Burns
				Dried stem bark powder mixed with camphor and ghee applied on wounds	Wounds
4.	<i>Albizia lebbek</i> (L.) Willd. (Mimosaceae)	Dirisena, Shirish	Root	The root juice is extended by adding 3 – 4 pepper seeds, half cup of juice is given to drink by the patient and a little paste is also to be smeared on the bite spot.	Snake bite
5.	<i>Alysicarpus monilifer</i> (L.) DC (Mimosaceae)	Amera, Necklace-pod	Leaves	Apply leaf juice on wounds twice daily for three days.	Wounds

6.	<i>Acacia farnesiana</i> (L.) Willd (Mimosaceae)	Murikithumma, Gukikar	Stem	100ml stem bark juice is given twice a day for three days.	Mad dog bite
7.	<i>Albizia amara</i> (Roxb.) Boivin (Mimosaceae)	Narlingi, Lallei	Stem	5g each of stem barks of <i>Albizia amara</i> , <i>Azadirachta indica</i> , <i>Zizyphus oenoplia</i> , <i>Capparis zeylanica</i> , <i>Ricinus communis</i> , and <i>Cassia fistula</i> are pounded together to make powder and mix one tea spoonful of powder, made into decoction in 100ml of water and filtered. The decoction thus prepared is given internally twice a day for two days.	Fever
8.	<i>Buteamonosperma</i> (Fabaceae)	Moduga, Palash	Stem	50ml of stem bark extract is given with equal amount of goat milk once a day for three days. Set up the bone and wrap with cloth then tie with stem fiber of <i>Butea monosperma</i> tightly.	Fracture
				50ml of stem bark extract is given internally for three days to check conception	Infertility
			Flower	Make powder by the dry flowers of <i>Butea monospema</i> , <i>Trachyspermum ammi</i> , <i>Cuminum cyminum</i> , <i>Piper nigrum</i> , <i>Zingiber officinalis</i> . Table spoon powder is given orally daily in the morning and evening till cured.	Fever
9.	<i>Bauhinia racemosa</i> Lam (Caesalpinaceae)	Aree, Apta	Leaves	Young leaves are ground to paste and applied to lips and in mouth.	Mouth ulceration
10.	<i>Clitoria ternatea</i> Linn (Fabaceae)	Shankha Pushpin, Gokurna	Root	Make root paste and applied along with leaf pulp of <i>Aloe vera</i> externally once daily for 3-4 weeks	Psoriasis
11.	<i>Caesalpinia bonduc</i> (L.) Fleming Caesalpinaceae)	Gachakai, Sagargota	Leaves	Leaf paste along with those of bandaged over the hydrocele.	Hydrocele
12.	<i>Canavalia virosa</i> (Roxb.) Wt. & Arn. (Fabaceae)	Thamma kaya, Abai	Leaves	Leaves extract is applied on the affected part once daily for three days.	Ring worm
13.	<i>Cicer arietinum</i> L (Fabaceae)	Senagalu, Harbara	Leaves	Leaves extract is applied on the affected part once daily for three days.	Immunity
14.	<i>Cassia auriculata</i> L. (Caesalpinaceae)	Thangedu, Tarwad	Flower	Handful flowers are crushed and mixed with 100ml of cow milk and given orally to treat white discharge.	White discharge
			Seed	5gm seed powder mixed with honey is given orally	Diabetes
15.	<i>Cassia fistula</i> L. (Caesalpinaceae)	Rela, Amaltash	Stem	50ml stem bark decoction is given orally.	Leprosy
16.	<i>Cassia tora</i> L (Caesalpinaceae)	Thydanta, Takla	Leaves	Grind 150g leaves, squeeze out the juice and apply on the cleaned wound once a day till it heals.	Wounds
17.	<i>Cassia occidentalis</i> L.(Caesalpinaceae)	Kasinha, Kasoda	Leaves	10ml leaf juice is given orally to cure boils.	Boils
18.	<i>Dalbergia paniculata</i> Roxb (Fabaceae)	Pacharugu, Sisum	Stem	Stem bark paste is applied to the hair once in a week to control hair fall due to dandruff	Hair fall and dandruff

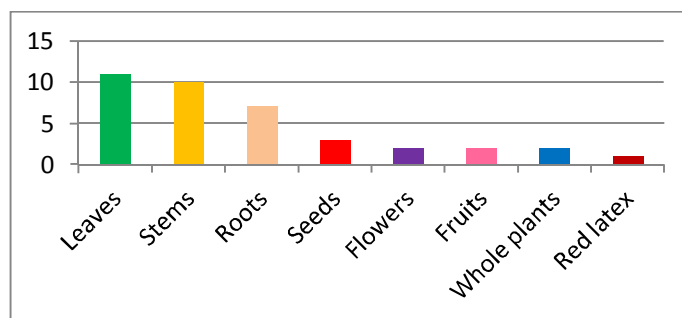
19.	<i>Desmodium gangeticum</i> (L.) DC (Fabaceae)	Deyyam jada, Salavan	Root	Decoction 50g fresh roots along with 3 pepper in 200ml of water and 10ml of this decoction is given internally twice daily for 3- 4 days.	Fever
20.	<i>Dolichos lablab</i>	Chikkudu, Ghevada	Stem	50g stem bark of <i>Gymnosporia montana</i> , and <i>Dolichos lablab</i> leaves are ground together and juice is extracted and goat liver is soaked in it for one day and fried without oil and eaten for 2-3 days.	Edima
21.	<i>Dichrostachys cinerea</i> (L.) Wt. & Arn. (Mimosaceae)	Velthuru Durangi babhul	Stem	10g stem bark extract of <i>Dichrostachys cinerea</i> and <i>Abutilon indicum</i> in water is given orally once in a day for a week.	Paralysis
22.	<i>Indigofera tinctoria</i> L (Fabaceae)	Konda Neeli, Neel	Whole plant	Whole plant is crushed into a paste, 10g paste is mixed with water and given orally	Dog bite
23.	<i>Mucuna pruriens</i> L. (Fabaceae)	Duldamma, Khaj-kuiiri	Whole plant	Whole plant is ground to paste and applied daily to remove Ectoparasites.	Maggot wounds
24.	<i>Mimosa pudica</i> L (Mimosaceae)	Athipathi, Lajalu	Leaves	Leaf paste is applied over snake bite.	Snake bite
			Root	10ml root extract is given twice in a day for two days.	Diarrhoea
25.	<i>Prosopis Cineraria</i> (L.) Druce (Mimosaceae).	Jammi Chettu, Shemi	Root	One tea spoon root bark powder mixed with 100ml of goat milk is given orally to cure White discharge	Leucorrhoea
26.	<i>Pongamia pinnata</i> L. (Fabaceae)	Kanuga, Karanja	Root	50ml root juice is mixed with equal amount of coconut milk and it is boiled and applied on the bloated stomach	Gastric trouble
27.	<i>Pterocarpus marsupium</i> Roxb (Fabaceae)	Pedda Yegi, Bibla	Red latex	Red latex is kept on tongue of a person suffering from prolonged fever.	Fever
			Stem	50ml stem bark decoction is given to teenage girls against menstrual complaints.	Menstrual complaints
28.	<i>Pueraria tuberosa</i> Willd (Fabaceae)	Nela gummadi, Ghorbel	Fruits	Fruit juice is applied to head and hair to cure dandruff and Hair growth.	Dandruff and Hair growth
29.	<i>Tephrosia purpurea</i> L. (Fabaceae)	Vempali, Sharpunkha	Leaves	Leaf paste is applied over the sting, the bitten area is exposed to heat of match	Scorpion sting
			Roots	The roots are chewed to cure stomach pain.	Stomach ache
30.	<i>Tamarindus indica</i> L (Caesalpinaceae)	Chintha, Chinch	Leaves	The leaves are heated and tied over the affected area.	Swelling
			Fruits	Dried fruits are taken orally to treat eye infections.	Eye diseases
31.	<i>Trigonella foenum-graecum</i> L (Fabaceae)	Menthi, Methi	Seeds	5g seeds are chewed to cure diarrhoea twice daily for two days.	Diarrhoea

## Results And Discussion

The plants of Adilabad district in Telangana region are well known for their medicinal properties. Several of the 31 Leguminous plant species presented in this paper need special attention on account of their restricted availability, threatened status and ethno botanical significance. This is of crucial importance in planning any meaningful conservation strategy. Medicinal plants are distributed in a wide range of habitats including, forests, grassy localities,



field margins, way side / road side etc. The World Health Organization (WHO), Food and Agricultural Organization (FAO) and United Nations Industrial Development Organization (UNIDO) emphasized the fact that more than 90% of world population particularly in China, Africa and India are exclusively dependent on herbs and traditional healers for maintaining a reasonable level of health and a lot of indigenous knowledge is required for their identification and processing<sup>9,10</sup>.



**Fig 2. Percentage of some medicinal plant parts utilized in the treatment of various disease / ailments**

These plants are used for the treatment of cough, cold, fever, dysentery, skin disease, malaria, kidney, stomach and intestinal disorder etc. In many cases different plant parts of the same species are being used to cure different ailments, for example, the decoction of flowers of *Butea monosperma* is used as blood purifier, seeds are used as anthelmintic agent and gum is used as tonic by ladies after delivery. Some of the medicinal plants such as *Abrus precatorius*, *Mucuna pruriens* and *Pterocarpus marsupium* Roxb (Fabaceae) have multipurpose utility. These species have been distributed within different life forms i.e. tree, shrub, herb, climber and trees. Various parts such as roots, rhizome, bark, leaves, seeds and whole plant are used for the treatment of various ailments. Of these leaves are used in 11 cases, stem in 10, roots 7, seeds 3, flower 2, Fruits 2, Whole plant 2 and Red latex 1. This knowledge on bio-resources can provide leads for search for new drugs through intensive pharmacological studies.

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# Ethno-Botanical Studies of Edible Plants Used by Tribal Women of Nirmal District

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## ABSTRACT

### Article Info

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The Tribal community in India already had the knowledge of the protienious food which is discovered by the world in recent times. These food materials rich in nutritional value has already been a part of their diet and hence is much stronger than the present generation. The present study is conducted in tribal area of Nirtmal District, Telangana State in year 2016 to 2018 focusing mainly on the tribal of Gondi, Kolams, Naikpods, Pardhna community. 19 Edible plants from 14 different families were identified from the study location.

**Keywords :** Nirmal District, Tribes, Edible plants, Gondi, Kolams, Naikpods

## I. INTRODUCTION

India, a mega diverse nation, is one of the richest nations in terms of biological diversity. India has rich and varied heritage of biodiversity and has different temperate zones, and wide varieties of habitants such as tropical rain forests, temperate forests, subtemperate, alpine forests, coastal and mangrove, and wet lands. India with its rich diversity of plant and animal wealth has a prominent place in the world. Although India occupies only 2% of world land, yet 7% of world's plant species and 6.5% of animal species are present in India alone. The largest number of the medicinal plants is known to occur in these Tropical dry deciduous forests only. Aborginal people consider themselves as the people of forest and depend on forest for fulfilling their needs. Forest products such as flowers, fruits, leaves etc, play a very important role in their daily diet. Tribal people play a

major role in the proper and sustainable utilization of these resources. It is necessary that we should have full knowledge about the occurrence, frequency, distribution and phenology of various medicinal plants for their proper utilization.

The present study deals with Traditional medicinal plants existing in the district of Nirmal district, Telamgana State related with the traditional medicinal practices of local trible community, Gondi, Kolams, Naikpods, Pardhna community, Chenchu and other village heads and local practitioners. As of today, there is no proper scientific documentation on edible fruits of these communities. To record the edible fruits of the tribal community of Nirmal district I took the help of local tribal peple.. Botanical identification and herbarium preparation of the plants used by local traditional tribal people. Publication of the scientific data in the form of documentation for

future scientific studies. To record the botanical identification, which is the sheet anchor for the scientific documentation.

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### Study Area

The Nirmal District is etched out of erstwhile Adilabad district. The district is located (19.10°N .78.35° E<sup>(4)</sup>) in northern Telangana and borders Maharashtra and the Telangana district of Asifabad, Koumumuram Bheem, Adilabad, Mancherial, Jagatyal, and Nizamabad the Tribal people of first two locations have exposure to rural population. The survey was undertaken for the year 2016 to 2018 in parts of Nirmal District of Telangana State, India. Local tribal people knowing more about these plants and helped in this research and identifying these plants. Tribal women of different age groups were interviewed to collect information about wild edible plants and frequency of consumption. Plant specimens were collected during the survey in different seasons and prepared herbarium, specimens and identified with the help of floras. It is deposited with the Botany department SAP College, Vikarabad. The plant specimens collected were identified and cross checked with the Herbarium of Department of Botany, PG College of science, Saifabad, Osmania University. In this study the local (vernacular) name of plants being used, methods of administration and precautions recorded and documented. For identification and cross checking frequent visits were made to the Botany department Herbarium, PG.



**Table 1.** Plant enumeration of ethno-botanical studies of edible plants used by tribal women

Sl. No	Family Name	Botanical Name	Description	Flowering & Fruitig
1.	Ampelidaceae	<i>Ampelocissus latifolia</i> (Roxb.) Planch.	Woody climbers, deep brown red flower. Fruits black succulent berries, which are sweet and juicy	Fl: June-July Fr: Aug-October
2.	Anacardiaceae	<i>Buchanania lanzan</i> Spreng.	A small straight tree, flowers white	Fl: Jan-March Fr: Apr-May
3.	Anacardiaceae	<i>Spondias pinnata</i> (L.f.) Kurz.	Middle sized tree, flowers white. Fruits are large and become yellow when ripe.	Fl: Feb-Mar Fr: August

			Fruit is eaten as a condiment and made into chutney and also eaten after ripening.	
4.	Ananacardiaceae	<i>Semecarpus anacardium</i> L.f.	Small trees, flowers dull greenish-yellow. Fruits are oblong ovoid drupes, finally become black. The fruit is eaten when completely ripe.	Fl: June-Sept Fr: Nov-Dec
5.	Areaceae	<i>Phoenix acaulis</i> Buch. – Ham..ex Roxb.	A common plant. Drupes are red, finally black. Ripe fruits are eaten.	Fl: March-april Fr: May-June
6.	Capparidaceae	<i>Capparis zeylanica</i> L.	Shrub with white or pink flowers, Fruits become red when ripe and are eaten	Fl: Mar-May Fr: Sept-Oct
7.	Convolvulaceae	<i>Erycibe paniculata</i> Roxb	Climbing shrubs, flowers yellowish-white. Berry black with dark-purple flesh. The fruits is sweet and is eate	Fl: May-June March-June
8.	Cucurbitaceae	<i>Coccinia grandis</i> (L.) Voigt.	Climbers with white flowers, fruits oblong, cylindrical. Raw fruits green, scarlet when ripe. Unripe fruits used as vegetables and pickled	Fl: Aug-Dec Fr: May-June
9.	Dilleniaceae	<i>Dillenia pentagyna</i> Roxb.	Small trees, flowers white. Raw fruits are edible	Fl: March-April Fr: May
10.	Dilleniaceae	<i>Dillenia indica</i> L.	Tree, flowers white solitary. The large fleshy accrescent calyces which form the outer covering of the fruit are eaten before they are quite ripe, usually after cooking	Fl: May-June Fr: Sept-Feb
11.	Ebenaceae	<i>Diospyros malabarica</i> (Desr.) Kostel.	Handsome trees, flowers white fragrant, fruits globose. Fruits are edible	Fl: Mar-April Fr: ripen the following March-April
12.	Ebenaceae	<i>Diospyros melanoxylon</i> Roxb.	Deciduous large tree, flowers white, fruits globose, yellow-brown when ripe and fragrant. Fruit pulp is sweet and eaten raw	Fl: April-May Fr: ripens the following May
13.	Euphorbiaceae	<i>Bridelia stipularis</i> (L.) Blume.	Large woody climber, flowers monoecious, green. Fruits red	Fl: May-Oct Fr: Dec-Jan
14.	Flacourtiaceae	<i>Flacourtia jangomas</i> (Lour.) Raeusch.	Small tree, flowers in glabrous racemes, Fruit purple when ripe and eaten.	Fl: June Fr: Oct-Jan
15.	Moraceae	<i>Ficus racemosa</i> L.	Large trees, recepts are globose. The fruits are largely eaten	Fr: Mar-June
16.	Rubiaceae	<i>Gardenia gummifera</i> L.f.	A handsome shrub, flowers large and white. Fruits ovoid with fleshy mesocarp and hard thin endocarp. The fruit is	Fl: March – May Fr: June-Aug

			eaten.	
17.	Rubiaceae	<i>Meyna spinosa</i> Roxb. ex Link.	A large shrub, flowers small green. Young leaves are eaten as vegetable. The fruits are eaten	Fl: June-Aug.
18.	Rutaceae	<i>Clausena excavata</i> Burm.f.	An under shrub with alternate leaves, flowers green. Fruit ellipsoid and eaten when ripe	Fl: May-June Fr: July-Aug
19.	Sapindaceae	<i>Schleichera oleosa</i> (Lour.) Oken.	Deciduous tree leaves leathery and dark green. Fruits ovoid with fleshy pulp. Yellow pulp is eaten when ripe, pleasant and acrid in taste. Fruits are pickled.	Fl: March Fr: June

## II. DISCUSSION

The life of the tribals is intimately connected with the plants in their day-to-day activities. They are dependant on the plants for their food, clothes, shelter, medicine, beverages, binding material, oils, resins, etc. the tribals and other rural people may be encouraged in their edible fruit plant species reported in this paper from significant component of the economic life of locals. Increased use of these plants may prove to be one of the major solutions to the problem of malnutrition and other increasing health issues among the tribals.

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# ETHNOBOTANY OF SELECTED MEDICINAL PLANTS DOCUMENTED AT ANANTHAGIRI HILLS, VIKARABAD DISTRICT, TELANGANA, INDIA

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## Abstract

The life of the Folk lore is intimately connected with the plants in their day-to-day activities. They are dependant on the plants for their food, clothes, shelter, medicine, beverages, binding material, oils, resins, etc. The paper deals with the indigenous Traditional medicinal knowledge of local Folk lore people of medicinal plants used to cure various diseases and ailments available in Ananthagiri hills, situated in Vikarabad district Telangana state. A total of 250 plant species belonging to 80 families are documented. The ethnobotanical data obtained from local inhabitants revealed that 113 diseases find curative chemical constituents in 250 plant species.

**Keywords:** Ananthagiri hills, Ethnic Botany, Ethnobotany, Healthcare, Medicinal plants, Traditional knowledge, Vikarabad District, Telangana.

## INTRODUCTION

The word 'ethno' means a group of people sharing common origin, culture, language, customs, beliefs, traditions, etc., and 'botany' is the study of plants. Thus, Ethnobotany is a hybrid term, with anthropological approach to plant science. For Ethnobotanical study, there should be close working relationship between botanists, ecologists, anthropologists, chemists, soil scientists, pharmacologists. While botanists are required to identify the plants, the others are required for ecology and environment, for gathering the data of the plants used by the ethnic groups, for phytochemical analysis, for noting down the details of soil and for testing the efficacy of native dugs. Since the past the people had tried to gain knowledge about the plants their uses. Plants have basic necessity to full fill their basic requirements like food, shelter etc. the modern medicines used now have their origin from the traditional medicinal knowledge. Many drugs are originated from the knowledge about the plants in traditional and folk medicine. World wide 80% of the population in developing countries still depends on traditional medicine for their primary health care as per world health organisation. The traditional medicinal plants depict the socio-culture, spiritual and medicinal area of rural tribal families. The very name Ethnobotany indicates that it is an interdisciplinary science. The life of the tribals is intimately connected with the plants in their day-to-day activities. They are dependant on the plants for their food, clothes, shelter, medicine, beverages, binding material, oils, resins, etc. The tribals have small families. They employ some plants for contraception. A further enquiry, in this line, may bring the population in general, under control. In India, plants have been used in traditional medicine for several thousand years. 2500 plant species used by traditional healers, 100 species of plants serve as regular sources of medicine. The tribals use curare botanically known as *Chondrodendron tomentosum* as hunting poison. Later on it has been

found by the scientific community that it contains tubocurarine, which is now being used as a painkiller and muscle relaxant. A further investigation, on other plants, may lead to the discovery of new sources in this direction. The tribals use some plants as narcotics and hallucinogens. A further enquiry may lead to the discovery of new drugs for anesthesia. **There are many remedies among the various traditional systems for cure, for a number of ailments.** Even now, due to poor condition of modern healthcare facilities, poverty, in-accessability to modern treatments, people of tribal and rural areas depend on medicinal plants to cure various diseases. There is an intimate relationship between plants and human beings. There are several references of use of plants by man in the Indian epics. Plants were used by our ancestors, folklore and tribal societies. Many of the rituals are plant-based. **So, the present study is aimed at documentation of ethnomedical uses of flora of the Ananthagiri hills**

## INDIA



## TELANGANA STATE



## VIKARABAD DISTRICT



## STUDY SITE

### Study area

The surveyed area for ethnomedicinal plants at Ananthagiri Hills and its environs falls under Vikarabad District of Telangana state, which lies between 160.30' and 180.20' of North latitudes and 770 .30' of East longitudes. The total geographical area of the District is 7493 sq. kms with nearly 800 villages and around 10 towns with a population of 25.52 lacks, and is most urbanized districts of Telangana state. The district has a poor forest cover and consists of Ananthagiri, Mahammadabad, Gungurthy, Adikcherla, Mothkupally, Nagupalli, Raskam, Pashapur and Dharur reserve forests. The district is mostly hilly with poor forest cover (only 0.9% of the total area). The general slope of the land, There is major hill ranges viz., Ananthagiri hill range. The average elevation of the hills is 509.91m.

### Types of soils and minerals

There are three major soil types in this region and comprises of red earths, loamy sands (Dubba), Sandyloams (chalka), and sandy-clay loam and black soils comprising clay loams, clays, silting clays etc., and the third type of soils of mixed nature, consisting of Quartz deposits followed by Felspar clay, amphyratand laterite, at Tandur which is 36 kms. Away from study area and composes of rich lime stone deposits (containing 173 million tons) of high quality cement grade lime stone. The climate is characterized by a hot summer of long duration and generally a dry weather, except during south-west monsoon season. The average annual rain fall is about 802mm. Which is comes from southwest monsoon during June to September. May is the hottest month with mean daily temperature at 400 C, however the temperature will come down during monsoon period. Decrease in temperature in day and night is seen during the month of December is the coldest month (130 C).

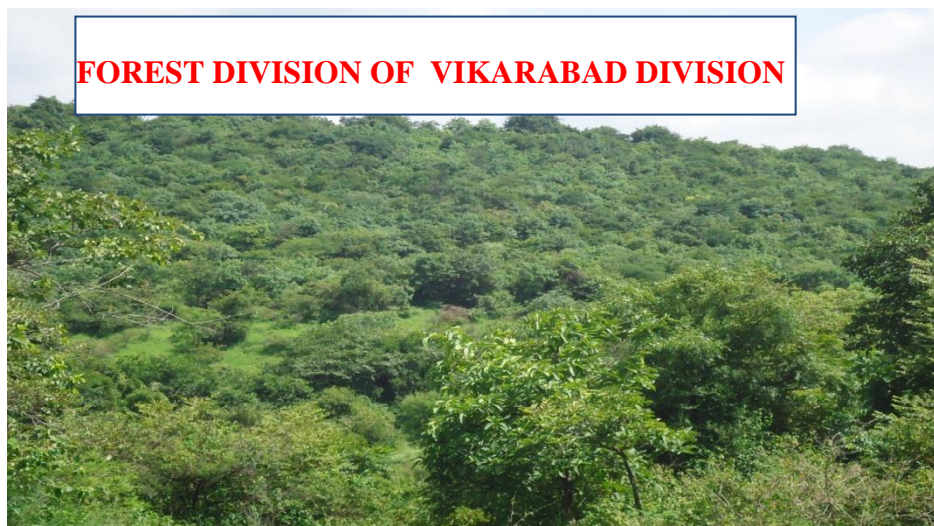


## Flora

The flora of the district exhibits and xerophytic adaptations 42.5% of the land is under cultivation of various crops. The hills and the slopes are generally covered by dry deciduous forests. The forests are not of much value commercially the forest area comes about only 10% of the total land area. The high density of population resulted in stress, as the area is nearer to the capital city Hyderabad.

## MATERIALS AND METHODS

The work was undertaken for about a period two years starting from June' 2017 to the end of June' 2019. The work is mainly confined to Ananthagiri Hills and its environs covering about a radius of 78 kms, which comes under Vikarabad reserved forest and along with ethnic information. In the present study the non-tribals like forest officials, teachers, registered medical practitioners, local herbal healers, shepherds and farmers who had traditional knowledge about medicinal plants were consulted and further authentication of information and future reference, voucher specimens were collected. The main aim of the survey is to prepare ready checklist of medicinal plants present at and around Ananthagiri hills used by local herbalists and village folklore to cure various human ailments. The areas covered are Ananthagiri hills particularly at Ananthapadmanabha temple and its surroundings, followed by villages of Ananthagiripalle, Godhumaguda, Kerelli, Dharur, Durgamchervu, Nagasanipalle Tanda, Mohammadanpalle, Velichala, Mothukupalle, (Reserved forest), Narsimhuni gutta, Gattukesaram, Kondapur and Ramaiahguda. The data presented here is collected by frequent field visits by the author to these areas once in two months for about a period of two years. The information's on medicinal properties of plants is gathered from various sources such as consulting the local village heads, elderly people, Vaidyas, and other herbal practitioners. Help from Forest department personnel including DFO-Vikarabad and his associates were taken during the survey.



## ENUMERATIONS

In the enumeration, the family and taxons are arranged alphabetically. Ethno botanical uses of some medicinal plant parts used by tribes for some disease

Sl. No.	Botanical Name	Family	Vernacular Name	Part	Aliment
1.	<i>Abrus precatorius L.</i>	Fabaceae	Gurivinda	Leaves,	Earache Cough cold Skin diseases
2.	<i>Abutilon indicum G.Don.</i>	Malvaceae	Adavi benda	Leaves	Urinary problems
3.	<i>Acacia nilotica (L) Delile sub-sp indica (Benth) Brenan.</i>	Fabaceae	Nalla tumma	Leaves	Wounds Asthma Cough Dental problems. Cough Dysentery piles.
4.	<i>Acacia leucophloea Willd.</i>	Fabaceae	Tella tumma		Ulcer boils. Bronchitis Rheumatic Fever arthritis Diabetes.
5.	<i>Acalypha indica L.</i>	Euphorbiaceae	Muripinda	Whole plant	Eczema, skin problems Wounds
6.	<i>Acalypha alnifolia Klen ex Willd.</i>	Euphorbiaceae	Mirapa kuppinta	Leaves	worms.
7.	<i>Acalypha paniculata Miq.</i>	Euphorbiaceae	Adavi kuppinta	Whole plant	Eczema Skin diseases Scabies Urinary Problems worm infestations
8.	<i>Acanthospermum hispidum DC.</i>	Asteraceae	Sanna palleru	Whole plant	Skin diseases and in scorpion sting
9.	<i>Achyranthes aspera L.</i>	Amaranthaceae	Uttareni	Whole plant	Leucorrhoea Diarrhoea Jaundice Tooth pain Asthma
10.	<i>Actinopteris dichotoma (Sw.) Link.</i>	Actinopteri-daceae	Pittakaalu	Whole plant	Dandruff Hair tonic Antifertility Antipyretic.
11.	<i>Adiantum incisum Forsk.</i>	Adiantaceae	Mayura sikha	Whole plant	Skin diseases.
12.	<i>Aerva lanata (L).Juss.</i>	Amaranthaceae	Konda pindi	Whole plant	Kidney stone Diabetes, boils cardiac diseases
13.	<i>Aerva javanica (Burm.f.) Juss ex Schult.</i>	Amaranthaceae	Pedda pindikura	Whole plant	Kidney stone problems.
14.	<i>Aganosma cymosa G.Don.</i>	Apocynaceae	Maalati lata	Root	Snakebite. Diarrhoea
15.	<i>Agave americana L.</i>	Amaryllidaceae	Kittanara	Leaves,	Other uses
16.	<i>Ageratum conyzoides L.</i>	Asteraceae	Vaasavi	Whole plant	Wound healing Gastro intestinal disorders.
17.	<i>Aglaia roxburghiana Sensu.Bedd.</i>	Meliaceae	Yerra adugu	Leaves	Antidote Diabetes. Leprosy Throat Pain
18.	<i>Albizia amara (Roxb.) Boiv.</i>	Fabaceae	Konda sigara	Leaves	Dandruff Skin diseases Gonorrhoea Piles.
19.	<i>Albizia lebbek (L.) Willd.</i>	Fabaceae	Dirisena	Leaves	Antidote. Piles Diarrhoea
20.	<i>Allophyllus cobbe (L.) Raeusch</i>	Sapindaceae	Chinna Kunkudu saali	Root	Diarrhoea.
21.	<i>Aloevera (L) Burma.f.</i>	Liliaceae	Chinna kalabanda	Leave	Sexualy Diseases
22.	<i>Alternanthera</i>	Amaranthaceae	Mulla	Leaves	Diabetes Gonorrhoea.

	<i>pungens</i> Kunth.		ponaganti		
23.	<i>Amaranthus blitum</i> L.	Amaranthaceae	Tota kura	Leaves	Urinary Problem kidney stones.
24.	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Mulla Tota kura	Leaves	Anaemia., Enhance lactation.
25.	<i>Andrographis paniculata</i> (Burm.f) Wall ex. Nees.	Acanthaceae	Nela vemu	Whole plant	Malaria.skin diseases feverAntidote.
26.	<i>Anisomeles malabarica</i> (L.)R.Br.	Lamiaceae	Maga bira	Leaves	Rheumatic pains
27.	<i>Anisomeles indica</i> (L.) Kuntz.	Lamiaceae	Chinna ranabheri	Whole plant	Urination problem . Fever
28.	<i>Annona reticulata</i> L.	Annonaceae	Ramaaphalam u	Leaves Stem bark	Diarrhoea Dysentery
29.	<i>Annona squamosa</i> L.	Annonaceae	Seetha phalamu	Unripe Fruit, Leaves	Diarrhoea Dysentery Destroy lice insects
30.	<i>Anodendron paniculatum</i> DC.	Apocynaceae	Atukudu teega	Root	Antifertility dysentery.
31.	<i>Argemone mexicana</i> (Willd) L.	papaveraceae	Yerri kusuma	Yellow latex	Skin diseases Fever
32.	<i>Argyrea nervosa</i> (Burm.f) Bojer.	Convolvulaceae	Chandrapaala	Roots	Wound healing Aphrodisiac
33.	<i>Aristida setacea</i> Retz.	Poaceae	Cheepuru gaddi	stem	Other uses
34.	<i>Aristolochia bracteolata</i> Retz.	Aristolochaceae	Gadida gadapa	Leaves	Dandruff Snakebite Scabies Eczema.
35.	<i>Aristolochia indica</i> L.	Aristolochaceae	Eswari	Leaves	Snakebite.
36.	<i>Artabotrys odoratissimus</i> R.Br.	Annonaceae	Teega sampenga	Leaves	
37.	<i>Asparagus racemosus</i> Willd.	Asparagaceae	Pilli gaddalu	Root	Fertility in women.
38.	<i>Asystasia gangetica</i> (L.) T.And.	Acanthaceae	Paada beera	Whole plant	Joint pains.
39.	<i>Azadirachta indica</i> A.Juss. W&A.	Meliaceae	Vepa chettu	Leaves	Chickenpox Smallpox Malaria.
40.	<i>Bambusa tulda</i> Roxb.	Poaceae	Mullu veduru	stem	Other uses
41.	<i>Basella rubra</i> L.	Basellaceae	Yerra batsalaku	Leaves	Leucoderma, Indigestion Kidney Stone Problems Gonorrhoea.
42.	<i>Bauhinia tomentosa</i> L.	Fabaceae	Kaanchini chettu	Young bbu ds	Dysentery Cough Leucorrhoea.
43.	<i>Benkara malabarica</i> (Lam) Tirven.	Rubiaceae	Pedda manga	Fruit	Abdominal pain ThroatInfections.
44.	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Atika maamidi	Whole plant	Jaundice Arthritis Diabetes.
45.	<i>Boerhaavia erecta</i> L.	Nyctaginaceae	Tella Atika maamidi	Whole plant	Jaundice A anaemia Urinary problem
46.	<i>Borassus flabellifer</i> L.	Arecaceae	Tati chettu	Leaves	Skinproblems
47.	<i>Brassica juncea</i> Hook & Thoms.	Brassicaceae	Aavaalu	Seed	Snakebite Skin allergies, Boils. Skin diseases.
48.	<i>Bridelia retusa</i> Spreng.	Phyllanthaceae	Koramaddi	Root	Hhepatoprotective.
49.	<i>Bryophyllum pinnatum</i> (Lam).Oken.	Crassulaceae	Ranapala	Leaves	Wounds Scabies Urinary bladder disorders.
50.	<i>Buchanania lanzan</i> Spreng.	Anacardiaceae	Saara pappu	Leaves	Leucorrhoea Menorrhoea. Diarrhoea.
51.	<i>Caesalpinia pulcherrima</i> (L.)Swartz.	Fabaceae	Pydi tangedu	Stem bark	Abortifacient. Purgative

52.	<i>Caesalpinia sappan L.</i>	Fabaceae	Gacha	Stem bark	Other uses
53.	<i>Calotropis gigantea (L.) Dryand.</i>	Apocynaceae	Tella Jilledu	Root	Skin diseases, arthritis Bites. wound healing
54.	<i>Cansjera rheedii J.Gmelin.</i>	Opiliaceae	Malli maduguteega	Leaves	poisonous bites. Leaves in Diabetes.
55.	<i>Canthium dicoccum</i>	Rubiaceae	Nalla balusu	Stem bark	Diarrhoea Fever.
56.	<i>Capparis oblongifolia Forsk.</i>	Capparaceae	Merupu teega	Root	Aphrodisiac Diabetic.
57.	<i>Caralluma adscendens var attenuata (Wight) Gravely and Mayur</i>	Apocynaceae	Kundeti kummulu	Stem	Stomachic Indigestion
58.	<i>Cardiospermum macrocarpum Kunth.</i>	Sapindaceae	Pedda budda	Whole plant	Rheumatic Pains.
59.	<i>Carica papaya L.</i>	Caricaceae	Boppayi	Fruit	Digestive Problem anthelmintic Emmenagogue Galactagogue constipation.
60.	<i>Cascabela thevetia (L.) Lipp.</i>	Apocynaceae	Pacha ganneru	Root	Paste in boils. Cancer. .
61.	<i>Cassia absus L.</i>	Fabaceae	Chanupaala vittulu	Leaves	Cough BoneFracture
62.	<i>Cassia fistula L.</i>	Fabaceae	Kola ponna	Root	Jaundice.
63.	<i>Cassytha filiformis L.</i>	Lauraceae	Paachi teega	Whole plant	Leucoderma Cough, Cold Skin diseases.
64.	<i>Catheranthes roseus (L.) G.Don.</i>	Apocynaceae	Billaganneru	Root	Cancer Diabetes Blood pressure Menorrhagia Cardio tonic Stomach disorders
65.	<i>Catunaregum spinosa (Thunb.) Tirven.</i>	Rubiaceae	Chinna manga	Root bark	Dandruff. Dysentery Diarrhoea Rheumatic pains.
66.	<i>Centella asiatica L.</i>	Apiaceae	Sarswati aaku	Leaves	Memory booster.
67.	<i>Ceropegia juncea Roxb.</i>	Apocynaceae	Manchi madana	Tuber	Dysentery Diarrhoea Urinary bladder Aphrodisiac Teeth problem.
68.	<i>Chloris barbata Sw.</i>	Poaceae	Jada kuchula gaddi	stem	Other uses
69.	<i>Chloroxylon swietenia DC.</i>	Rutaceae	Billu	Leaves	Wounds Rheumatism
70.	<i>Cipadessa buccifera Miq.</i>	Meliaceae	Potti vepa	Leaves	Antidote and antidiabetic. wound healing
71.	<i>Cissus quadrangularis L.</i>	Vitaceae	Nalleru	Whole plant	Paste in bone fracture.
72.	<i>Citrullus colocynthis (L.) Scharder.</i>	Cucurbitaceae	Yerri pucha	Root	Pains. Purgative
73.	<i>Citrus medica L. var. medica</i>	Rutaceae	Maadipalamu	Fruit	Giddiness Indigestion Gastric vomiting
74.	<i>Cleome gynandra L.</i>	Cleomaceae	Vaaminta	Leaves	Ear and tooth problem Anthelmentic
75.	<i>Coccinia indica W&amp;A.</i>	Cucurbitaceae	Dondakaaya	Whole plant	Diabetes Skin diseases
76.	<i>Cocculus hirsutus (L.) Diels.</i>	Menispermaceae	Sibbi teega	Leaves	Leucorrhoea
77.	<i>Commelina benghalensis L.</i>	Commelinaceae	Venna veduru	Whole plant	Wounds Boils, burns Scabies
78.	<i>Commiphora caudata (W&amp;A) Engl.</i>	Burseraceae	Konda regu	Root	Aphrodisiac antidiabetic.

					Rheumatic pains.
79.	<i>Cordia oblique Willd.</i>	Boraginaceae	Bankairiki	Fruit	Bronchial disorders.
80.	<i>Crossandra undulaefolia Salisb.</i>	Acanthaceae	Kanakambaramu	Leaves	Cough and cold
81.	<i>Crotalaria calycina Schr.</i>	Fabaceae	Bikkina tharudu gida		Other uses
82.	<i>Crotalaria verrucosa L.</i>	Fabaceae	Glligicha	Whole plant	Leucorrhoea Swelling, Scabies, Leprosy
83.	<i>Cucurbita maxima L.</i>	Cucurbitaceae	Gummadi kaaya	Leaves	Asthma.
84.	<i>Curculigo orchioides Gaertn.</i>	Hypoxidaceae	Nelatadi gaddalu	Whole plant	Leucorrhoea Impotency
85.	<i>Cyanotis tuberosa (Roxb).Schult.</i>	Commelinaceae	Yemma gaddalu	Root	Febrifuge
86.	<i>Cynodon dactylon Pers.</i>	Poaceae	Garika gaddi	Whole plant	Scorpion sting.
87.	<i>Cyperus rotundus Linn.</i>	Cyperaceae	Tunga mushti	Root	Leucorrhoea
88.	<i>Dactyloctenium aegyptium (L.) Willd.</i>	Poaceae	Nela raagi	stem	Other uses
89.	<i>Daemia extensa (Jacq.)R.Br.</i>	Apocynaceae	Dustapu teega	Whole plant	Asthma, Diarrhoea, Jaundice, Eye Problem, Labour Pain
90.	<i>Dalbergia lanceolaria L.f</i>	Fabaceae	Yerra pachari	Whole plant	Arthritis, Dyspepsia.
91.	<i>Dalbergia sissoo DC</i>	Fabaceae	Sissoo	Whole plant	Rheumatoid Arthritis, Sexual impotency, Dyspepsia, Dysurea ulcers.
92.	<i>Delonix regia Raf.</i>	Fabaceae	YerraSunkesula	Leaves	Inflammation arthritis.
93.	<i>Delonix elata (L.) Gamble</i>	Fabaceae	Tella sunkesula	Leaves	Glandular swellings
94.	<i>Dendrophthoe facata (L.f) Ettingsh.</i>	Loranthaceae	Badanika	Whole plant	In urinary calculi, wounds, asthma, Skin allergies.
95.	<i>Desmodium gangeticum (L) DC</i>	Fabaceae	Ubbu chettu	Whole plant	Epilepsy, Cough, Diarrhoea, Fever, Piles
96.	<i>Desmodium triflorum (L) DC.</i>	Fabaceae	Muntamandu	Leaves	Diarrhoea, Dysentery
97.	<i>Dichrostachys cinerea W&amp;A.</i>	Fabaceae	Veluturu chettu	Root	Rheumatism, urinary problem, Renal troubles, Leucorrhoea.
98.	<i>Dicliptera paniculata (Forssk.)I.Darbysh.</i>	Acanthaceae	Sanna pulla	Root	Skin diseases, Fever, Indigestion, Wound healing.
99.	<i>Digera arvensis Forsk.</i>	Amaranthaceae	Chenchala koora	Leaves	Constipation, wounds, boils, Digestive disorders
100.	<i>Digitaria sanguinalis (L.) Scop.</i>	Poaceae	Vutla gaddi	stem	Other uses
101.	<i>Dioscorea oppositifolia L.</i>	Dioscoraceae	Yella gadda	Leaves	General health
102.	<i>Dioscorea pentaphylla L.</i>	Dioscoraceae	Yesuru gaddalu	Tubers	Urinary calculi
103.	<i>Diospyros chloroxylon Roxb.</i>	Ebenaceae	Ulinda	Fruit	Digestive Problem.
104.	<i>Dodonaea viscosa</i>	Sapindaceae	Bandedu	Leaves	Wound healing.

	(L.) Jacq.				Muscle swelling Epilepsy Bone fracture.
5.	<i>Dolichondrone arcuata</i> (Wight) C.B. Clarke.	Acanthaceae	Neeruddi	Stem bark	Leucorrhoea Menorrhoea.
6.	<i>Dolichos falcatus</i> Klein.	Fabaceae	Adavi Pillipesara		Other uses
7.	<i>Dregea volubilis</i> (L.f) Benth ex Hook.f	Apocynaceae	Tummudu teega	Leaves	Rheumatic pains. Cold Snakebites. Bone fractures.
8.	<i>Drimia indica</i> (Roxb.) Jessop.	Liliaceae	Adavi yerra gadda	Bulb	Skin diseases
9.	<i>Drypetes sepiaria</i> (W&A). Pax and Hoffm.	Putranjivaceae	Maachi beera	Fruit	Digestive Disorders
0.	<i>Eclipta prostrata</i> (L.) L.	Asteraceae	Guntagalagara	Whole plant	Skin diseases Jaundice
1.	<i>Ehretia microphylla</i> Lamk.	Boraginaceae	Chinna tamalapaku	Leaves	Skin diseases, cough, stomach Disorders.
2.	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Thippa raagi	Stem	Other uses
3.	<i>Elytraria acaulis</i> (L.f) Lindau.	Acanthaceae	Yeddu adugu	Leaves	Wound healing.
4.	<i>Emilia sonchifolia</i> (L)DC.	Asteraceae	Kundeti aaku	Whole plant	Diarrhoea Night blindness
5.	<i>Enicostemma axillare</i> (Lam) Raynal	Gentianaceae	Nela golimidi	Tender shoot	Menorrhoea Leucorrhoea.
6.	<i>Eragrostis tenella</i> (L.) Beauv.	Poaceae	Chinna garika gaddi	Stem	Other uses
7.	<i>Eucalyptus teriticornis</i> Smith.	Myrtaceae	Neelagiri tylamu	Leaves	Cough and fever. Rheumaticpains.
8.	<i>Euphorbia antiquorum</i> L.	Euphorbiaceae	Bomma jemudu	Whole plant	Skin Diseases Leucorrhoea. Arthritis. Leprosy Toothache. Cancer.
9.	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Pacha bottu	Whole plant	Urinary Disorders Leucorrhoea Asthma Cough Liver Disorders.
0.	<i>Euphorbia thymifolia</i> L.	Euphorbiaceae	Yerra usirika	Whole plant	Urinary disorders Leucorrhoea Asthma, Cough Liver disorders.
1.	<i>Evolvulus alsinoides</i> L.	Convolvulaceae	Vishnukaanta	Whole plant	Hair tonic.
2.	<i>Ficus arnottiana</i> Miq.	Moraceae	Konda raavi	Stem bark	Cleanse teeth.
3.	<i>Ficus benghalensis</i> L.	Moraceae	Marri chettu	Latex	Rheumatism Tooth ache Piles. Leucorrhoea Dysentery
4.	<i>Ficus glomerata</i> Roxb.	Moraceae	Atti	Stem bark	Toothache. Diabetes sexual debility
5.	<i>Ficus hispida</i> L.	Moraceae	Bommidi	Stem bark	Leucorrhoea Diabetes. Sexual impotency.
6.	<i>Ficus mollis</i> Vahl.	Moraceae	Noogu juvvi	Leaves	Diabetes Jaundice.
7.	<i>Ficus religiosa</i> L.	Moraceae	Raagi	Stem bark	Skin diseases aphrodisiac.

8.	<i>Fluggea leucopyrus</i> Willd.	Euphorbiaceae	Tella purugudu	Leaves	Leucorrhoea
9.	<i>Gardenia gummifera</i> L.f.	Rubiaceae	Manchi bikki	Gum	Gastrointestinal disorders Fever.
0.	<i>Getonia floribunda</i> Lamk.	Combretaceae	Adavi Jaama	Leaves	Ulcers Antidote. Jaundice.
1.	<i>Gevotia rottelriformis</i> Griff.	Euphorbiaceae	Tella poliki	Stem bark	Leucorrhoea. Skindiseases.
2.	<i>Glinus cerviana</i> (L.) Ser.	Molluginaceae	Verri chatraku	Whole plant	Stomach pain Fever
3.	<i>Glinus nudicaulis</i> Lam.	Molluginaceae	Parpadagam	Whole plant	Whooping cough and boils
4.	<i>Glinus oppositifolia</i> (L.) DC.	Molluginaceae	Santraasi	Whole plant	Ulcer, swellings stomach disorders and skin diseases. Other uses
5.	<i>Gloriosa superba</i> L.	Liliaceae	Adavi naabhi	Root	Chicken- pox
6.	<i>Glycosmis mauritiana</i> (Lam) Tanaka.	Rutaceae	Gungi	Leaves	Skin diseases.
7.	<i>Gmelina asiatica</i> L.	Verbenaceae	Chinna gummadi	stem	Stomach pain.
8.	<i>Gmelina arborea</i> Roxb.	Verbenacea	Pedda gummudu e	Leaves	Cough. Diabetes and leucorrhoea.
9.	<i>Gymnema sylvestre</i> (Retz) R.Br.ex.Schult.	Apocynaceae	Podapatri	Leaves	Diabetes Hypoglycemic Obesity High Cholesterol Anaemia Digestion Scorpion Sting Rat Bite Fruits In Anthelmintic Bronchitis Cardiac Disorders.
0.	<i>Gyrocarpus americanus</i> Jacq.	Hernadiaceae	Tella poliki	Stem bark	Cancer. Other uses
1.	<i>Hardwickia binata</i> Roxb.	Fabaceae	Yepi	Wood powder	Gonorrhea.
2.	<i>Hedyotis herbacea</i> L.	Rubiaceae	Chiru veru	Whole plant	Asthma Fever and Dysentery.
3.	<i>Hedyotis umbellata</i> (L.) Wall.	Rubiaceae	Nela chemma	Root	Asthma.
4.	<i>Heliotropicum indicum</i> L.	Boraginaceae	Naagadanti	Whole plant	wound healing, skin Problems Scorpion sting.
5.	<i>Hemidesmus indicus</i> (L.) Schult.	Apocynaceae	Sugandhapala	Root	Cardiotonic Refrigerant Wound Healing Urinary Diseases Skin Diseases, Jaundice Diabetes.
6.	<i>Hemionitis arifolia</i> (Burm.f) Moore.	Hemionitidaceae	Ramabhanam	Whole plant	Knee pain. Diabetic Burns Antifertility
7.	<i>Hibiscus hirsutus</i> (Lam) Sweet.	Malvaceae	Nela benda	Leaves	Chest pain
8.	<i>Hugonia mystax</i> L.	Linaceae	Kaaki beera	Root	Antidote
9.	<i>Hybanthus enneaspermus</i> (L.)F.V.Muell.	Violaceae	Ratna pushpa	Whole plant	Aphrodisiac
0.	<i>Ichnocarpus frutescens</i> (L.)R.Br.	Apocynaceae	Nalla teega	Whole plant	Cancer Diabetes SskinDiseases .Diabetes, Dyspepsia Bladder Stones.

1.	<i>Indigofera linnaei</i> Ali.	Fabaceae	Yerra Palleru	Whole plant	Leucorrhoea Fever Epilepsy
2.	<i>Indigofera tinctoria</i> L.	Fabaceae	Konda neeli	Leave	Increase Lactation Mothers Burns Piles JAundice Leucorrhoea Anaemia Aarthritis
3.	<i>Indigofera linifolia</i> Retz .	Fabaceae	Yerra palleru	Whole plant	Wound healing tuberculosis Obesity kidney stone. Seed antidote.
4.	<i>Ixora pavetta</i> Andrews.	Rubiaceae	Korivi chettu	Flowers	Whooping cough
5.	<i>Jasminum rigidum</i> Zenk.	Oleaceae	Pedda malli	Flower	Cough.
6.	<i>Jasminum sambac</i> Ait.	Oleaceae	Virajaaji	Flower	Skin diseases.
7.	<i>Jatropha curcas</i> L.	Euphorbiaceae	Adavi- amudamu	Latex	Cracks on lips Burns Wounds Toothache
8.	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Yerra aamudamu	Leaves	Heal Wounds Cuts.
9.	<i>Kedrostis rostrata</i> (Rottl.) Cong.	Cucurbitaceae	Kunkuma donda	Root	Asthma Piles. Antidote Anthelmintic.
0.	<i>Lantana camara</i> L.	Verbenaceae	Puli kampa	Leaves	Ringworm Infestations.
1.	<i>Lawsonia inermis</i> L.	Lythraceae	Gorintaaku	Leaves	Skin Diseases Burns.
2.	<i>Leonotis nepetaefolia</i> (L)R.Br.	Lamiaceae	Yerra tummi	Whole plant	Rheumatic pains Wounds.
3.	<i>Leucas aspera</i> (Willd).Link.	Lamiaceae	Tummipoo	Leaves	Cough Cold Fever Head ache Scorpion Sting Fever Stomach Pain Indigestion.
4.	<i>Limonia alata</i> (W&A)Swungle.	Rutaceae	Munugudu	Leaves	Diabetes. Rheumatic pains.
5.	<i>Lygodium flexuosum</i> (L.) Sw.	Lygodiaceae	Adavi shatavari	Leaves	Rheumatic pain wound healing
6.	<i>Magifera indica</i> L.	Anacardiaceae	Maamidi	Leaves	Diarrhea Dysentery. Rheumatism. Diabetes.
7.	<i>Martynia annua</i> L.	Martyniaceae	Telukondi kaaya	Fruit	Scorpion sting
8.	<i>Mimosa pudica</i> L.	Fabaceae	Attipatti	Whole plant	Aantidote. Skin Diseases.
9.	<i>Mimosa rubicaulis</i> Lam.	Fabaceae	Uddra kampa	Root	Wounds Snakebite Urinary Disorders
0.	<i>Mimosops elengi</i> L.	Sapotaceae	Pogada	Whole plant	Dental Disorders Eye Diseases Diabetes
1.	<i>Mimulus orbicularis</i> Benth.	Scrophulariaceae	Verla kammi	Whole plant	wound healing
2.	<i>Mitragyna parviflora</i> Korth.	Rubiaceae	Rudraganam	Stem bark	Other uses
3.	<i>Momordica charantia</i> L.	Cucurbitaceae	Kaakara	Fruit	Diabetes Blood purifier. Diabetes.



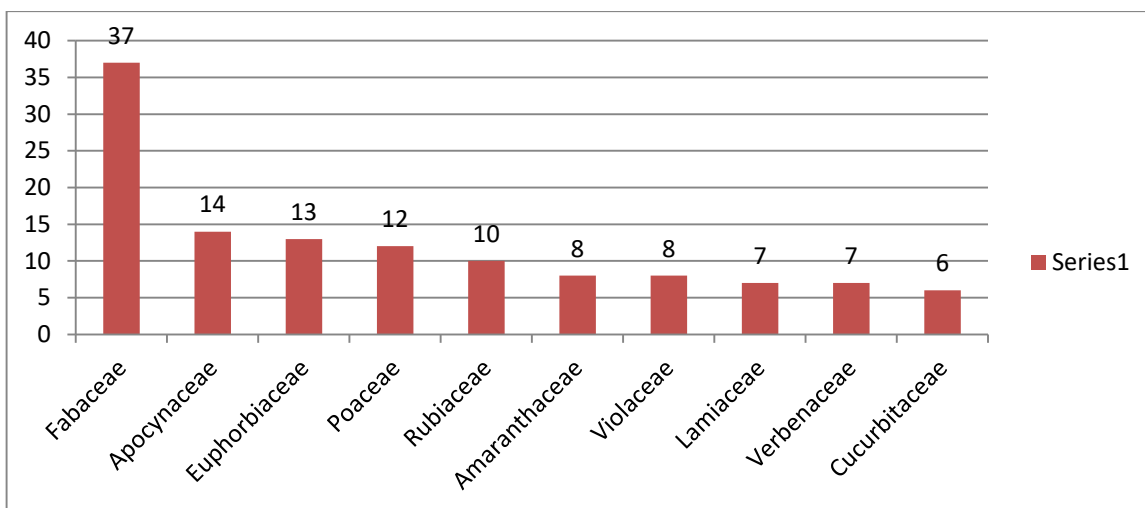
4.	<i>Moringa pterygosperma Gaertn.</i>	Moringaceae	Munaga	.Leaves	Antifertility
5.	<i>Mucuna atropurpurea DC.</i>	Fabaceae	Dulagondi	Roots	Diarrhoea Diabetes Asthma.
6.	<i>Mukia maderaspatana (L)M.Roem.</i>	Cucurbitaceae	Nugudosa	Whole plant	Diarrhoea Tuberculosis Eczema. Eye ache Bronchitis
7.	<i>Mussaenda frondosa L.</i>	Rubiaceae	Naagavalli	Leaves	Cough.
8.	<i>Ocimum americanum Sims.</i>	Lamiaceae	Kukka tulasi	Leaves	Fever, Cold Bronchitis.
9.	<i>Ocimum gratissimum L.</i>	Lamiaceae	Rama tulasi	Whole plant	Cough Arthritis Diabetes Earache, Toothache Indigestion.
10.	<i>Ocimum tenuiflorum L.</i>	Lamiaceae	Krishna tulasi	Leaves	Diabetes Cold, cough Asthma, impotency Hypertension Ulcers Stomach disorders.
11.	<i>Oplismenus compositus (L.) Beauv.</i>	Poaceae	Kodi juttu gaddi	stem	Other uses
12.	<i>Opuntia dillenii Haw.</i>	Cactaceae	Naagajemudu	. Flower	Boils. Whooping cough Throat pain.
13.	<i>Panicum ramosum L.</i>	Poaceae	Edeguru gaddi	stem	Other uses
14.	<i>Panicum repens L.</i>	Poaceae	Laddi gaddi	stem	Other uses
15.	<i>Parmelia sp.(Huds) Ach</i>	Parmeliaceae	Raati paachi	Leaves	Other uses
16.	<i>Passiflora foetida L.</i>	Passifloraceae	Tella jumiki	Leaves	Giddiness Headache. Asthma. Wounds.
17.	<i>Phoenix sylvestris (L.) Roxb.</i>	Arecaceae	Pedda ita	Leaves,	Other uses
18.	<i>Phyllanthus emblica L.</i>	Phyllanthaceae	Usirikaya	Fruit	Gastric problems, Anaemia, Dysentery Liver problems.
19.	<i>Phyllanthus polyphyllus Willd.</i>	Phyllanthaceae	Adavi usirika	Leaves	Jaundice.
20.	<i>Phyllanthus amarus Schum.</i>	Phyllanthaceae	Nela usirika	Whole plant	Jaundice Diabetes.
21.	<i>Phyllanthus virgatus Forst.</i>	Phyllanthaceae	Toka usirika	Leaves	Diabetes Jaundice Urinary Problem
22.	<i>Plumbago zeylanica L.</i>	Plumbaginaceae	Tella chitramulam	Leaves	Ulcers Skin diseases.
23.	<i>Podaxis pistillaris(L.) Fries.</i>	Agaricaceae	Yerri putta kokku	Leaves	Skin diseases
24.	<i>Pongamia pinnata (L) Pier.</i>	Fabaceae	Kanuga	Leaves	Skin diseses. Night blindness. Antidiabetic. Cough. KidneyStone, Abdominal painSnakebite
25.	<i>Portulaca oleracea L.</i>	Portulacaceae	Pedda paayalaaku	Whole plant	Jaundice Cardiac diseases Diabetes.
26.	<i>Portulaca quadrifida L.</i>	Portulacaceae	Sanna paalaaku	Whole plant	Asthma cough Urinary problem

7.	<i>Pouzolzia zeylanica</i> (L.) Benn & R. Br.	Urticaceae	Eddu mooti dumpa	Whole plant	Sores, Snakebites.
8.	<i>Premna tomentosa</i> Willd.	Verbenaceae	Naaguraaku	Stem bark	Abdominal pin
9.	<i>Prosopis spicigera</i> L.	Fabaceae	Jammi	Stem bark	Diarrhoea Skin diseases cough.
0.	<i>Pseudarthria viscida</i> (L.) W & A.	Fabaceae	Adavi chikkudu	Roots	Asthma Diarrhoea
1.	<i>Psidium guajava</i> L.	Myrtaceae	Jaama	Leaves	Diarrhoea Vomiting.
2.	<i>Pterocarpus marsupium</i> Roxb.	Fabaceae	Yegisa	Gum	Diabetes Stomach ulcers Diarrhoea Skin diseases Pimples. Dysentery
3.	<i>Pterospermum xylocarpum</i> (Gaertn.) Sant & Wagh.	Malvaceae	Lolugu chettu	Leaves	Leucorrhoea.
4.	<i>Pupalia lappacea</i> (L.) A. Juss.	Amaranthaceae	Adavi uttaren	Root paste	Cuts, boils Fever. Bone fracture.
5.	<i>Putranjiva roxburghii</i> Wall.	Putranjivaceae	Putra jeevika	Seed	Retention of pregnancy.
6.	<i>Rhynchosia aurea</i> DC.	Fabaceae	Adavi vulava		Other uses
7.	<i>Ricinus communis</i> L.	Euphorbiaceae	Aamudamu	Leaves	Constipation, Arthritis, Spondylitis, Diabetes Jaundice.
8.	<i>Ruellia prostrata</i> Poir.	Acanthaceae	Adavi kottimeera	Leaves	Gonorrhoea. Ear problems
9.	<i>Sansevieria roxburghiana</i> Schult.	Amaryllidaceae	Seyanara	Leaves	Snakebite.
0.	<i>Santalum album</i> L.	Santalaceae	Chandanamu	oil credited	Cooling Diaphoretic Burns Headache.
1.	<i>Sapindus emarginata</i> Vahl.	Sapindaceae	Kunkudu	Fruit	Anthelmintic.
2.	<i>Sarcostemma brevistigma</i> W & A.	Apocynaceae	Pulla jemudu	latex	Asthma. Toothache.
3.	<i>Scilla hyacinthina</i> (Roxb) Macbride.	Liliaceae	Adavi telligadda	Bulb	Worm infestations
4.	<i>Scoparia dulcis</i> L.	Scrophulariaceae	Dakshini	Whole plant	menstrual diseases.
5.	<i>Senna auriculata</i> (L.) Roxb.	Fabaceae	Tangedu	Stem bark	Diabetes
6.	<i>Senna occidentalis</i> Roxb.	Fabaceae	Kasinda	Leaves	Scorpion bite
7.	<i>Sesamum indicum</i> L.	Pedaliaceae	Nuvvulu	Seeds	Skin diseases Body heat Sexual vigour Fertility in sterile women.
8.	<i>Setaria verticillata</i> (L.) Beauv.	Poaceae	Chiklenta gaddi	stem	Other uses
9.	<i>Sida cordifolia</i> L.	Malvaceae	Tella gorra	Leaves	Urinary disorders.
0.	<i>Smilax zeylanica</i> Linn.	Smilacaceae	Konda gurutteega	Root	Skin problems
1.	<i>Solanum americanum</i> Mill.	Solanaceae	Kamanchi	Leaves	Jaundice Anaemia Cough Liver disorders.
2.	<i>Solanum virginianum</i> L.	Solanaceae	Naela vaakudu	Whole plant	Skin Diseases Tooth Problems.
3.	<i>Solanum torvum</i> Swartz.	Solanaceae	Konda vushti	Leaves	Wounds Cough Toothache.
4.	<i>Spermocoe hispida</i> L.	Rubiaceae	Madana	Leaves	Haemorrhoids.
5.	<i>Striga asiatica</i> (L.) Kuntz.	Scrophulariaceae	Raati badanika	Whole	Snake bites

				plant	
6.	<i>Strychnos nux vomica</i> L.	Loganiaceae	Mushti	Root	Epilepsy Ringworm Rheumatic Pains
7.	<i>Strychnos potatorum</i> L.	Loganiaceae	Chinna Mushti	Stem bark	Diabetes Gonorrhoea Kidney stone.
8.	<i>Stylosanthes fruticosa</i> (Retz.)Alston.	Fabaceae	Salla kampa	Whole plant	Fever. Iarrrhoea Cold.
9.	<i>Tamirindus indica</i> L.	Fabaceae	Chinta	Seed powder	Diarrhoea antidote
10.	<i>Tectona grandis</i> L.f	Verbenaceae	Teku	Wood powder	Leprosy Diabetes Skin diseases
11.	<i>Tephrosia purpurea</i> (L.)Pers.	Fabaceae	Vempali	Whole plant	Bronchitis cough Boils, pimples jaundice kidney disorders.
12.	<i>Terminalia arjuna</i> W&A.	Combretaceae	Tella Maddi	Leaves	Leucoderma
13.	<i>Terminalia chebulaa</i> Retz.	Combretaceae	Kaakarakaya	Fruit	Diabetes Jaudice Cough Obesity
14.	<i>Thespesia populnea</i> Cav.	Malvaceae	Gangiraavi	Leaves	Joint pain. Cough. Antidote
15.	<i>Tinospora cordifolia</i> Miers.	Menispermaceae	Tippa teega	Leaves	Jaundice
16.	<i>Tragia cannabina</i> L.f	Euphorbiaceae	Gogu gondi	Leaves	Jaundice
17.	<i>Trema orientalis</i> (L.)Blume.	Ulmaceae	Konda jonna	Root	Epilepsy.
18.	<i>Trianthema portulacastrum</i> L.	Aizoaceae	Nelagalijeru	Leaves	Asthma.
19.	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Chinna palleru	Leaves	Jaundice kidney stone. Rheumatic pains
20.	<i>Tricholoma gigantea</i> . Massee	Agaricaceae	Putta godugu	fruit	Edible
21.	<i>Tridax procumbens</i> L.	Asteraceae	Gaddi chamanti	Leaves	Skin diseases Eye diseases cuts and wounds. Jaundice
22.	<i>Tylophora asthmatica</i> W&A.	Apocynaceae	Kakapaala	Root	Asthma Bbronchitis Snakebite
23.	<i>Urginea indica</i> (Roxb.)Kunth.	Liliaceae	Adavi yerra gadda	Bulb	Cough and Rheumatic
24.	<i>Vanda tessellata</i> Hook ex G.Don.	Orchidaceae	Saga vega badanika	Leaves,	Earache
25.	<i>Viscum articulatum</i> Burm.f.	Loranthaceae	Kaada Badanika	Whole plant	Cuts, wounds fever Increase Sexual vigour
26.	<i>Vitex altissima</i> L.f	Verbenaceae	Nemiladugu	Stem bark	Fever.
27.	<i>Vitex negudo</i> L.	Verbenaceae	Tella vaavili	Whole plant	Cough Cold Body pains
28.	<i>Waltheria indica</i> L.	Malvaceae	Nalla benda	Whole plant	Wound healing Skin diseases.
29.	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	Regu	seed	Diabetes, Aasthma Piles

RESULTS ANDDISCUSSION

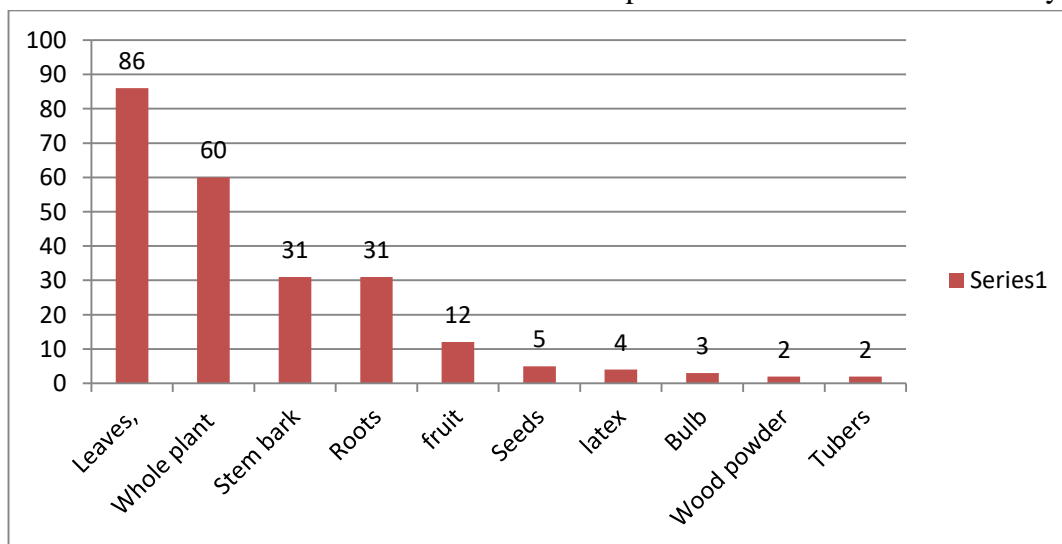
The present study encompasses the in-depth investigation on medicinal plants which are used in by the local healers in the district of Vikarabad, Telangana state. An attempt is made to gather information from the Tribal communities. These communities are directly interlinked with nature and having symbiotic relationship with the medicinal plants in the region. The author has recorded 250plant species belonging to 80families Angiospermic families of medicinal plants which are used by the herbal practitioners for treating health care applications Fabaceae is the dominant one with 37 plant species Apocynaceae . Euphorbiaceae, Poaceae, Rubiaceae. Amaranthaceae, Verbenaceae, Cucurbitaceae,



Graph showing No. of species from some families

The Traditional botanical data obtained from localpeople revealed that 113 diseases find curative chemical constituents in 250 plant species. It was observed that the number of plant species to cure skin diseases occupy the first place followed by Antidote , Cough , Dental careDiabetes , Diarrhoea , Febrifuge , Jaundice, Leucorrhoea Rheumatic pains

Urinary disorders. Asthma The remaining plant species of accounted for the cure of remaining 100 diseases allergy, burns, cancer, cuts, dandruff, epilepsy, hair growth, impotency, lactogogues leucoderma, obesity, purgatives, sexual vigour (aphrodisiac),The bone fractures, tuberculosis, wounds, and various other diseases also find curative chemicals in the medicinal plants documented from the study site.



Plants parts used

## NON-MEDICINAL USES OF PLANTS

Tribes of Adilabad district use forest produces for various purposes other than medicinal plants such as food, fiber, fuel, gum, oils, broom sticks, toys, agricultural use, building huts, fodder for animals, flowers use in the festivals to offer and decorate gods and goddess, marriages, birth and death ceremonies, belief and taboos etc. The same is discussed under various categories as described below. Tribal communities collect seasonally available fruits, seeds and nuts from time to time from the forest and store them for future requirements that includes the plant produces of *Aegle marmelos*, *Anacardium occidentale*, *Annona reticulate*, *Annona squamosa*, *Borassus flabellifer*, *Bridelia retusa*, *Buchanania axillaris*, *Buchanania lanzan*, *Careya arborea*, *Cassia fistula*, *Cissus vitiginea*, *Cordia dichotoma*, *Diospyros chloroxylon*, *Diospyros melanoxylon*, *Garuga pinnata*, *Gardena gummifera*, *Gradenia latifolia*, *Grewia tiliifolia*, *Limonia acidissima*, *Litsia glutinosa*, *Litsia glutinosa*, *Maba buxifolia*, *Mangifera indica*, *Schleichera oleosa*, *Semicarpus anacardium*, *Strychons potatorum*, *Syzygium cumini*, *Tamarindus indica*, *Terminalia alata*, *Xylia xylocarpa* and *Zizipus mauritiana*. During winter season they collect tubers like *Asparagus racemosus*, *Chlorophytum arundinaceum*, *Corallocarpus epigaeus*, *Curculigo orchoides*, *Dioscorea bulbifera*, *Dioscorea pentaphylla* and *Discorea alata*. In the rainy season they also use tender leaves of *Achyranthes aspera*, *Aegle marmelos*, *Aerva lanata*, *Balanites roxburghii*, *Commelina benghalensis*, *Emilia sonchifolia*, *Gymnema sylvestre*, *Limonia acidissima*, *Madhuca indica*, *Momordica charantia*, *Moringa concanensis*, *Oroxylum indicum*, *Phyllanthus emblica*, *Pupalia lappacea*, *Terminalia bellirica* and *Terminalia chebula* as leafy vegetables. Tribal communities extract oil from the oil seeds for edible and non- edible purposes. Edible oil plant species are *Arachis hypogea*, *Carthamus tinctoris*, *Helianthus annua*, *Gossypium herbacium*, *Guizotia abyssinica*, *Madhuca indica*, *Ricinus communis*, *Schleichera oleosa*, *Sesamum indicum*, where as non- edible oil species like, *Jatropha curcas*, *Pongamia pinnata* are used by the tribal communities for their traditional lamps and these oils are also used as biodiesel in the urban societies. Various indigenous medicinal formulations and practices employed by the herbal healers and traditional Practitioners should be evaluated by pharmacological validation. Tribal communities are completely depended on wild fodder species to feed their animals. Tree species are mostly lopped by the tribals to feed their cattle and goats. The species which are lopped for green leaves as fodder in the summer are *Acacia catechu*, *Acacia nilotica*, *Albizzia lebeck*, *Butea monosperma*, *Ficus tinctoria*, *Azadirachta indica*, *Ficus virens*, *Holoptelea integrifolia*, and *Mangifera indica*. During rainy and winter season species like *Bambusa arundinacea*, *Bauhinia recemosa*, *Cassia fistula*, *Gmelina arborea* and *Moringa concanensis* are used as fodder. Climber species like *Coccinia grandis*, *Pueraria tuberosa* and shrub species like *Ixora pavetta*, *Solanum xanthocarpum* are used in winter and rainy season as fodder. Herbs and grasses like *Achyranthes aspera*, *Asparagus racemosus*, *Boerhavia diffusa*, *Cassia occidentalis*, *Cocculus hirsutus*, *Dioscorea oppositifolia*, *Eclipta prostrata*, *Ipomoea carnea*, *Trianthema portulacastrum* and grass species of *Cynodon dactylon* were found to be used for their animals.

## CONCLUSION

The country has a number of alternative medicines, like Ayurveda, Unani, Siddha and Homeopathic systems which are predominantly based on plant based raw materials in most of their preparations and formulations. Herbal preparations for various purposes including pharmaceutical and cosmetic form part of traditional biodiversity uses in India. India is one of the twelve mega biodiversity countries in the world representing 6.5 percent of world's know wildlife and 12 percent of plant life. Of this ten percent of flora is on the verge of extinction, and many more are on the threatened list while some of them are already rare or disappeared due to inhospitable atmosphere created by man to the plants.

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# CHARACTERISATION AND ETHNOBOTANICAL KNOWLEDGE STUDIES OF SOME MEDICINAL PLANTS OF NIRMAL DISTRICT, TELANGANA STATE, INDIA

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## ABSTRACT

The present study contains the first-hand information gathered by the author for Two years on medicinal plants used by tribal communities like Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras of Nirmal district. The author has chosen 30 locations, which include Tribal Gudems in remote areas in the core forest zones of the district. The tribal communities of Nirmal district are known for their efficient “**art of healing**” which is most ancient practiced by them from time to time. The Nirmal District is etched out of erstwhile Adilabad district. The district is located (19.10<sup>0</sup>N .78.35<sup>0</sup> E <sup>(4)</sup>) in northern Telangana and borders Maharashtra and the Telangana districts of Asifabad, Koumuram Bheem, Adilabad, Mancherial, Jagatyal and Nizamabad. The Tribal people of district have exposure to rural population. The Author has documented about 139 species belonging to 38 families used to cure different human ailments and has also documented few non-medicinal uses of plants.

**Keywords:** Ethnobotanical Knowledge: Art of healing: Nirmal District, Telangana State,

## INTRODUCTION

The traditional medicinal practices have become the integral part of our social culture particularly in the developing countries like Asia, Africa and Latin America. The importance of traditional system of medicine has recognized all over the world. The ethno-botanical (scientific study of the relationship that exist in between plants, people and their culture) information plays a vital role in scientific evaluation, effectiveness and active principles of medicinal plants. Early man used to hunt in the jungle for plants and animals to meet their hunger and they search for their needy materials like foliage, bark and skin protect them from harsh weather. Traditional practices help in sustainable use of bio-resources, traditional knowledge about land races or wild crop plants and other economic species which are more suited to local conditions and micro climates are very useful in agricultural practices. There is a possibility to uplift of the local communities through development of industry based on traditional arts, tools, gadgets, crafts and other minor forest produces medicines. The word “ETHNO” means a group of people sharing common origin, culture, language, customs, beliefs, traditions etc. Thus, Ethno-botany is the study of relationship between man and plants and indicates that it is a multidisciplinary science that requires an inter-disciplinary approach through several avenues. Thus, Ethno-botany is a hybrid term with anthropological approach to plant science. For the study of Ethno-botany, we should have a close working relationship between botanists, ecologists, anthropologists,

chemists, soil scientists, and pharmacologists. About 2500 species of plants have been recognized officially as medicinal plants while over 6000 species of plants are estimated to be explored in folk, traditional and herbal medicine (Huxley, 1984). The countries which have cultural continuity and ancient tradition had a rich legacy of folk science and traditional knowledge systems. In the old world in the western nations with large colonies, such knowledge systems were looked down upon the importance of folk science and ridicules prejudice which denies it as superstition. Only in few countries such as North America and Australia, where the native populations had almost vanished, has the continuity of folk traditions been disrupted. 'Local knowledge' or 'Traditional knowledge' is a record of human achievement in comprehending the complexities of life and survival in often unfriendly environment said by United Nations University's proposals. The traditional knowledge, which may be social, organizational, technical or cultural, had obtained as a part of the great human experiment of survival and development (D.P. Agarwal, 2000).

### **AIMS AND OBJECTIVES**

The present study deals with Traditional medicinal plants existing in the district of Nirmal related with the traditional medicinal practices of local Tribble e community, The work is aimed at documentation, availability, utility and methodology of drug preparation by these communities in the fields of primary healthcare of human being health practices. As on today there is no proper scientific documentation of healing practices of these communities. To record the traditional medicinal practices of the folklore community of Rangareddy district and the potentiality of ETHNOBOTANICAL KNOWLEDGE of the local people. Differing Folklore Medicinal practices by different communities in Nirmal district.. Botanical identification and herbarium preservation of the plants used by them, which are in use for curing the diseases by them, for different ailments. To record the methodology followed by them in diagnosis and administration of the drug for curing of the diseases. Publication of the scientific data in reputed journals for future scientific studies. Morphological study, which is the sheet anchor for the scientific documentation of traditional knowledge? To study the other non-medicinal uses of the plants such as food, fodder and other uses

### **STUDY AREA**

The Nirmal District is etched out of erstwhile Adilabad district. The district is located (19.10°N .78.35° E<sup>(4)</sup>) in northern Telangana and borders Maharashtra and the Telangana district of Asifabad, Koumuram Bheem, Adilabad, Mancherial, Jagatyal, and Nizamabad the Tribal people of first two locations have exposure to rural population.



## ETHNOBOTANICAL ENUMERATION.

Botanical name	Family Name	Local Name	Disease	Formulation
<i>Abrus atorius</i> L	Fabaceae	Gurivinda	Scabies	Make paste out of handful fresh leaves grinding with 5g fresh rhizome of <i>Curcuma longa</i> .
			Arthritis	Daily once apply the paste on affected part of the body.
<i>Abutilon indicum</i> (L.) Sweat.	Malvaceae.	Botla benda	Mouth ulcers	Dry seeds 10g and root bark 10g of <i>Asparagus</i> , race mosus to make powder and mix with sugar to taste. Given one teaspoon powder daily once in the morning for 3 days.
			Stomach pain	Daily 2 times a day chew 5 – 6 fresh young leaves.
			Vomiting	Make juice from 10g fresh leaves and 10g stem bark of <i>Grewia tiliaefolia</i> and mix sugar to taste. For one time dip heated stone to the sterilize solution. Give 10ml juice for 2 times.
<i>Acacia farnesiana</i> (L.) Willd.	Mimosaceae	Kasturi tumma	Mad dog bite	Daily twice give 100ml stem bark juice for 3 days.
			Foot abscess:	Soak stem bark in water for 3 days and after 3 days boils this water along with stem bark pieces. Dipped foot of affected animal into water when it is Luke warm.
<i>Acacia nilotica</i> (L.) Del.	Mimosaceae	Nalla tumma	Toothache	Daily clean teeth with stem bark ash until cured.
			Burns and wounds	Take stem bark ash and mix it into coconut oil and apply till cured
<i>Acalypha indica</i> L.	Euphorbiaceae	Kuppinta	Ring worms	Take fresh leaf juice and add turmeric powder and salt in it. Apply externally daily once till cured
<i>Acanthospermum hispidum</i> DC.	Asteraceae	Guntakalagaraku	Cuts and Wounds	Make paste from leaves and applied on effected area once a day for 3-4 days.
			Wounds:	Add a tea spoonful of curcuma powder in leaf paste. Apply the paste externally on wounds once in a day until cured.
<i>Achyranthes aspera</i> L.	Amaranthaceae	Circita	Burns	Apply leaf extract as a lotion for 2-3 days
<i>Aegle marmelos</i> (L.) Corr.	Rutaceae.	Maradu	Arthritis	Arthritis: Mix leaf paste with equal amount of sesame oil. Apply paste externally on the affected part once a day till cured.
			Dysentery	Daily twice given 10g semi burnt fruit for 2 – 3 days
<i>Aerva lanata</i> (L) R.Br.	Amaranthaceae	Pindikura	Abdominal pain	10 ml root decoction is given internally once in the early morning for 3 days.

<i>Agave americana</i> Linn.	Agavaceae	Sakari matta	Ulcers	To cure ulcer, we must take 50g leaf pulp along with 1g sugar for 30 days.
<i>Ageratum conyzoides</i> L	Asteraceae	Sahadevi	Urinary infection	For the relief from burns apply fresh leaf juice on the burns.
			Urinary infection	Prepare the extract from leaf about 10ml and it should be given orally twice a day for 3 days.
<i>Alangium salvifolium</i> (L.f.) Wang	Alangiaceae	Udugaa	Arthritis	100ml of solution prepared by handful stem bark with five fruits of black pepper grind together and wrap it in cotton cloth and dip in 250ml of hot water for fifteen minutes is to be given internally for onetime. Repeat it after a week if needed.
			Stomach pain	Prepare juice from leaf and add double quantity of cow ghee to the juice. Take orally one time a day for 3 days.
			Foot rot	Make paste from stem bark-then mix curcuma powder in it. Apply this paste on affected part once a day for 3 days.
<i>Albizia amara</i> (Roxb.) Boivin	Mimosaceae (Fabaceae).	Narlingi.	Fever	Collect 5g each of stem barks of <i>Azadirchta indica</i> , <i>Albizia amara</i> , <i>zizyphus oenoplia</i> , <i>capparis zeylanica</i> , <i>ricinus communis</i> and <i>cassia fistula</i> are grinded together to make powder and then mix 1 tea spoon powder to make decoction in 100ml water. Daily twice give this filtered decoction internally for 2 days.
<i>Albizia lebbek</i> (Linn.) Willd.	Mimosaceae.	Dirisana	Scabies	Take 50g stem bark along with 2 fruits of piper nigrum and grind well. Mix this powder into one glass (i.e., 200ml) water. Thrice a day give 100ml of this internally for 1 day.
<i>Aloe vera</i> (L.) Burm.f.	Liliaceae.	Kalabanda.	Red discharge in woman	Red discharge in woman: Once a day give 100g leaf pulp with sugar until cured.
			Burning sensation while urination	Burning sensation while urination: For 3 days give 50g leaf pulp along with 10g glucose.
<i>Alternanthera sessilis</i> (L.) DC.	Amaranthaceae	Ponnagantikura	Night blindness	Make curry with leaves and given once a week.
<i>Alysicarpus monolifer</i> (L.) DC.	Fabaceae	Amera	Wounds	Daily twice applies leaf juice on wounds for 3 days
<i>Alysicarpus monolifer</i> (L.) DC.	Fabaceae	Amera	Wounds	Daily twice applies leaf juice on wounds for 3 days.
<i>Amaranthus spinosus</i> L	Amaranthaceae	Nalladoggata	Cuts and burns	Apply fresh leaf juice on affected part.

<i>Andrographis paniculata</i> (Burm.f.) Wall.ex Nees	Acanthaceae	Nelavemu	Controlling high BP	To control B.P we need 10 fruits of piper longm and piper nigram each grind whole fruits and make 5g of each pill. Use one pill daily orally until it comes to normal.
			Stomach pain	Add one tea spoonful powder in cow milk and it should be given internally for one time.
			Fever	The decocted prepared with this plant along with 3 fruits of black pepper 10ml decoction should be given internally thrice daily until cured
<i>Annona squamosa</i> L.	Annonaceae	Seethaphal	Arthritis	Make paste from leaves and applied externally on effected part daily one-time till cured.
<i>Anthocephalus cadamba</i> (Roxb.) Miq	Rubiaceae.	Rudraganam	Dysentery	Daily once given 10ml stem bark juice along with 1 glass of water for 3 days.
<i>Argemone mexicana</i> L.	Papaveraceae.	Yerrikusuma.	Swelling	Daily twice apply milk sap externally on the affected area for 2 – 3 days.
			Skin allergy	Apply daily once the milk sap externally on the affected part for 3 – 4 days.
<i>Argyreia nervosa</i> (Burm.f.) Bojer	Convolvulaceae	Samudrapala.	Skin allergy	Leaf paste can be applied on affected part daily one time till cured.
<i>Aristolochia bracteolata</i> Lam	Aristolochiaceae	Gadidagadapaku	Stomach pain	Add 3 fresh leaves grinded with 3 fruits of <i>Piper nigrum</i> into 20ml of water and make juice. Then 20ml of juice should be given orally for one time only.
<i>Aristolochia indica</i> L.	Aristolochiaceae	Nalla eswari	Skin infection	Use 10ml decoction prepared by roots daily one time in morning for a wee
			Maggot Wound	Grind leaves and roots and made paste and apply externally on the effected part daily one time for three to four days.
<i>Asparagus racemosus</i> Willd.	Liliaceae	Satavari	Mouth ulcer	In the morning time give one tea spoonful root powder along with seed of <i>Abutilon indicum</i> with sugar.
			Enhance breast milk	Once a day give root powder with milk or water to mothers internally to increase milk.
<i>Azadirachta indica</i> A. Juss.	Meliaceae	Vepa.	Fever	Boil 50g stem bark of each <i>Azadirachta Indica</i> , <i>Zizyphus Oenophia</i> , <i>Capparis Zeylanica</i> , <i>Ricinus Communis</i> , <i>Cassia fistula</i> and <i>Albizia amava</i> in 1 litre of water for 15 minutes. Give 5ml decoction daily twice internally for 3 – 4 days.

<i>Balanites aegyptiaca</i> (L.) Del.	Balanitaceae	Gara chettu	Fever	Crushed the fruits and is given internally with water daily once three days.
			Immunity	To fight with water bone disease leaf chutney is pared and it is eaten once in a week during just rains or onset of monsoon to enhance immunity in their body by locals.
			Joint pains	To cure joint pains in old people dried fruit pulp is very useful
<i>Bambusa arundinaceae</i> (Retz.) Willd	Poaceae.	Veduru.	Diarrhoea	Daily once feed the cattle with leaves for 2 days.
			Retained Placenta	Feed to cows or buffaloes with green leaves after delivery. In a single dose given 200ml leaves decoction internally.
<i>Barleria prionitis</i> L.		Mulla gorinta	Toothache	For the quick relief from pain chew the fresh stem piece of stem for 5minuts daily for 2 days.
			Arthritis	For the relief from arthritis one need fresh leaves roasted and put them on affected part when they are slightly warm once daily till cured.
			Swelling	Make paste from the roots and apply externally on the affected part for 2-3 days.
<i>Basella alba</i> L.	Basellaceae	Bachali kura	Anemia	To enhance heamoglobin percentage. Prepare chutney with leaves of <i>Basella alba</i> , <i>Moringa olerifera</i> . Eat this chutney twice a week for 3 weeks.
<i>Bauhinia racemosa</i> Lamk.	Caesalpiaceae	Aare chettu	Arthritis	30 ml decoction is prepared with stem barks of <i>Bauhinia racemosa</i> , seme carpus anacardium and given internally once a day for 2 days.
<i>Biophytum sensitivum</i> (L.) DC.,	Oxalidaceae	Muduchu thamara	Cut and wounds	Externally apply leaf paste daily once until cured.
			Gonorrhe	Daily once in the morning given 10ml root decoction internally for 4 weeks.
<i>Boerhaavia diffusa</i> L.,	Nyctaginaceae.	Atikamamidi.	Anaemia	Daily once gives 10ml leaf juice with honey for 15 days.
			Diarrhoea	Daily twice take orally 10ml leaves decoction till cured.
<i>Bombax ceiba</i> L.	Bombacaceae		Diarrhea	50g fresh stem bark to be crushed and give with 500ml water internally 2 times a day for 3 days.
			Bone Fracture	First setup the bone and wrap with cloth then tie with stem fiber of <i>Beauteamonosperma</i> tightly prepare 50ml stem bark extract with equal quantity of goat milk is given only once a day for 3 days.
<i>Boswellia serrata</i> Roxb.	Burseraceae	Andugu	Arthritis	Take one tea spoon full gum powder and mix in a glass of goat

				milk and is given daily once till cured.
<i>Bridelia montana</i> Willd.	Euphorbiaceae	Panchothkam	Dysentery	Twice a day give internally one tea spoonful of stem bark powder along with one glass of warm water for 3 days.
<i>Bridelia retusa</i> (L.) Spreng.	Euphorbiaceae	Mulumaddi	Arthritis	Daily once applies externally on the affected part of the body. 50g crushed stem bark decocted in 100ml sesame oil for 15 minutes until cured.
<i>Bryonopsis laciniosa</i> (L.) Naud.	Cucurbitaceae	Ningi donda.	Stomach pain	Take 10g seeds and 5g black pepper grind them and make powder. As a single dose take 10g powder internally.
			Arthritis	Make decoction with seeds and sesame oil and apply topically twice daily for 15 days.
<i>Buchanania lanzan</i> Spreng.	Anacardiaceae	Morlichettu	Infertility	Make powder of seeds 25g and add goat or cow milk and it should be given internally during bet time after 15 <sup>th</sup> day of menstruation.
<i>Butea monosperma</i> (Lamk.) Taub.	Fabaceae	Moduga	Fever	Collect dry flowers of <i>Butea monosperma</i> , <i>Cuminum cymium</i> , <i>Trachyspermum ammi</i> , <i>Piper nigrum</i> and <i>Zingiber officinalis</i> and make powder. Give this powder of one table spoon orally in morning and evening until cured.
			Intestinal worms	Only once give decoction prepared by flowers 50ml orally.
<i>Caesalpinia bonduc</i> (L.) Roxb.	Caesalpiniaceae	Gacha	Intestinal worms	Take one glass of water then add 5g of seed pulp powder and mix well and it can be given twice daily until cured.
<i>Calotropis gigantea</i> (L.) R.Br.	Asclepiadaceae	Nalla jilledu.	Athritis	The milk sap (juice of plant) is applied externally on the injured area 2 times a day for 3 days.
			Scorpion sting	From the relief of scorpion sting take a juice i.e., milk sap and mixed it with mango resin equally and apply on the place where sting for twice a day.
<i>Calotropis gigantea</i> (L.) R.Br.	Asclepiadaceae	Nalla jilledu.	Arthritis	The milk sap (juice of plant) is applied externally on the injured area 2 times a day for 3 days.
			Scorpion sting	From the relief of scorpion sting take a juice i.e., milk sap and mixed it with mango resin equally and apply on the place where sting for twice a day.
			Burning sole	From the relief of scorpion sting take a juice i.e., milk sap and mixed it with mango resin equally and apply on the place where sting for twice a day.

<i>Canavalia virosa</i> (Roxb.) Wt. & Arn.	Fabaceae	Thamma kaya.	Ring worm	Daily once applies leave extract on the worm for 3 days.
<i>Canthium parvilorum</i> Lam.	Rubiaceae	China balusu.	Intestinal worms in children	In a single dose given once in the morning 3ml root extract internally.
<i>Capparis zeylanica</i> L.	Capparaceae	Adonda	Fever	Prepare decoction in one litre of water by collecting 5 g stem bark each of <i>Azadi rachta indica</i> , <i>Rilinus communis</i> , <i>Capparis zeylanica</i> , <i>Cassia fistula</i> , <i>Albizia amava</i> , <i>Zizyphus oenophia</i> , 20 ml of decoction prepared is given internally twice a day for 2 days.
			Diabetics	Ripend fruits control sugar levels used for daily twice a day.
<i>Cardiospermum halicacabum</i> L.	Sapindaceae.	Patapata.	Wounds	Make paste by grinding 50g leaves along with 5g <i>Cuminum cyminum</i> and apply once a day externally on the affected part for 3 days
			Arthriti	Prepare decoction by 50g leaves in 100ml sesame oil and apply only once daily until cured.
<i>Careya arborea</i> . Roxb.	Barringtoniaceae	Dudippa.	Stomach pain	To cure stomach pain due to intestinal worms & indigestion take 10ml of extract from stem bark internally twice a day for 2 days.
			Fever	Prepare decoction from leaf and stem bark and 10ml of decoction is given internally 2 times a day for 2 days
<i>Cassia auriculata</i> L.	Caesalpiniaceae	Bathukamma pulu	Diabetic	Matured stem powder of about 20g is given with one glass of water daily once in a month
			Leucorrhoea	To control white discharge in women during menstrual time. Flower decoction of 20ml should be given internally.
<i>Cassia fistula</i> L.	Caesalpiniaceae	Rela	Arthritis	Leave paste apply externally during bed time for 3 – 4 days.
			Stomach pain	Fruit pulp reduces stomach pain.
			Fever	The stem barks of 5g each of <i>Cassia fistula</i> , <i>Capparis zeylanica</i> , <i>Albizia amara</i> , <i>Azadi rechta indica</i> , <i>Zizyphus oenophia</i> and <i>Bicinus communis</i> dry them all and make powder. Then take one tea spoonful powder and 1glass of water boil it for 10 minutes. Give this decoction twice a day for 2 days orally. <b>Throat infection:</b> Prepare decoction of Fruit pulp and is used

				to control throat infection by gargle (wash mouth and throat with liquid with gurgling sound).
<i>Cassia occidentalis</i> L.	Caesalpiniaceae	Kasintha,	Stomach pain	1g powder of <i>Carum copticum</i> mixed into 50ml root extract and give orally once daily till cured.
<i>Cassia tora</i> L.	Caesalpiniaceae	Thydanta	Wounds	Apply leaf paste on affected part daily once for 3 - 4 days.
<i>Celastrus paniculatus</i> Willd.	Celastraceae.	Jyothismathi.	Arthritis	Crush 10g seed and boil it in 100ml sesame oil for 15 minutes and apply it externally on the affected part once daily. During bed time till cured.
<i>Celosia argentea</i> L.	Amaranthaceae	Bathukamma puvvu.	Scabies	Leaf paste is applied locally twice daily till cured.
			Night blindness	Make chutney with fresh leaves and eaten twice in a week for two months.
<i>Centella asiatica</i> (Linn.) Urban	Apiaceae.	Saraswati aku	Sun allergy	Prepare juice from leaf and apply externally on effected area once a day for 2 days
			Jaundice	Prepare juice from leaves and 20ml of juice is given internally early in the morning for 4-5 days.
<i>Chloroxylon swietenia</i> DC.	Flindersiaceae.	Bitlugu.	Burns & Wounds	Take stem bark ash mixed it into coconut oil and apply till cured.
<i>Cissus quadrangularis</i> Linn.	Vitaceae.		Cold and Cough	Given orally 10ml tender shoots extract as a single dose.
			Bone fracture	Given orally fresh stem grinded and mix along with ghee for a week to quick recovery from fracture pain.
<i>Cissus vitiginea</i> L.	Vitaceae.	Dididi aku	Wounds	Daily once applies stem bark paste externally until cured.
<i>Citrullus colocynthis</i> (L.) Schrad.	Cucurbitaceae.	Verri puchakaya	Jaundice	Take 100ml cow milk then mix 5g of Root powder in it. Given internally once in a week for 3 weeks. Avoid eating chicken, mutton and fish etc.
<i>Citrullus colocynthis</i> (L.) Schrad.	Cucurbitaceae.	Paparabundama	Snake bite	Given internally twice a day 100ml root extract.
			Yoke gall	Extract of fresh leaves is applied on the effected part twice a day for 3 days.
			Stomach pain	Fruit extract of 5ml is mixed into 50ml water and drenched only once a day for one day.
<i>Citrus aurantifolia</i> (Christm. & Panz.) Swingle	Rutaceae.	Nimma.	Dandruff	Apply externally 5ml fruit juice along with 20g curd twice a week for 1 month.
			Vomiting	Inhale the ripened fruits smell then it cures
<i>Citrus aurantifolia</i> (Christm. & Panz.) Swingle	Rutaceae.	Nimma.	Dandruff	Apply externally 5ml fruit juice along with 20g curd twice a week for 1 month.

			Dandruff	Inhale the ripened fruits smell then it cures.
<i>Cleistanthus collinus</i> (Roxb.) Bth. ex Hook. f.	Euphorbiaceae	Billa godisa,	Fungs in fingers	Daily once apply leaves paste by adding little turmeric powder for three days.
<i>Cleome gynandra</i> Linn.	Capparidaceae.	Vamiti.	Ear ache	Leaf extract of 2 – 3 drops pour into the effected ear daily once for 2 days.
<i>Cleome viscosa</i> Linn.	Capparidaceae.	Thalati	Action and uses	The parts of plant are used to control laxative, diuretic, anthelmintic, and useful in skin diseases, itching, leprosy, ulcer, blood diseases and cough. The leaves juice is useful headache.
<i>Cleome viscosa</i> Linn.	Capparidaceae.	Vaviti.	Action and us	The parts of plant are used to control laxative, diuretic, anthelmintic, and useful in skin diseases, itching, leprosy, ulcer, blood diseases and cough. The leaves juice is useful headache.
<i>Clerodendrum multiflorum</i> (Burm. f.) O. Ktze.	Verbenaceae	Thakkali chettu.	Stomach Pain	Take handful leaves along with 5g of <i>Trachyspermum ammi</i> grind it and make bolus like pills. Daily twice give 10g size pill internally for one day.
			Arthritis	Externally apply leaf paste on the affected part once a day for 2 days.
<i>Clerodendrum serratum</i> (Linn.) Moon	Verbenaceae	Gantubharangi	Fever	Take 50g root along with 20g of <i>Andrographis paniculata</i> and 3 black-peppers and prepare decoction. Daily twice give 20ml decoction internally for 3 days.
<i>Clitoria ternatea</i> Linn.	Fabaceae.	Shankhapushpi.	Psoriasis	Daily once applies root paste along with leaf pulp of <i>Aloevera</i> externally for about 3 – 4 weeks.
<i>Coccinia grandis</i> (L.) Voigt.	Cucurbitaceae.	Adavi donda	Sprains and swellings	100ml leaf juice is boiled in sesame oil for 15 minutes. Apply it externally on the affected part daily once tills cured.
<i>Coccinia grandis</i> (L.) Voigt.	Cucurbitaceae.	Adavi donda	Sprains and swellings	100ml leaf juice is boiled in sesame oil for 15 minutes. Apply it externally on the affected part daily once tills cured.
<i>Cocculus hirsutus</i> (L.) Diels.	Menispermaceae	Telladusura.	Venereal disease	Daily once given 20ml leaf juice orally for 1 month.
			Leucorrhoea	Daily once given leaf juice by adding sugar for 15 days
			Red discharge	Take handful leaves and 10g of crystalins sugar (misri) and grind give internally once a day for 15 days.
<i>Cochlospermum religiosum</i> (Linn.) Alston.	Cochlospermaceae	Konda gogu.	Cough	Take stems barks of <i>cochlospermum religiosum</i> and <i>terminalia chebula</i> and makes powder. Then take 100ml hot water and mix 2 g powder into it.



				100ml of it is given internally once in the early morning for a week.
<i>Cordia dichotoma</i> Forst. f.	Boraginaceae.	Banka nakker	Diarrhoea	Fruits which are semi burnt is given internally for 3 times a day. Fruits which are semi burnt is given internally for 3 times a day.
<i>Croton bonplandianum</i> Baill	Euphorbiaceae.	Galivana alam.	Sprains and Swellings	Daily once applies milk sap on the affected area for 3 – 4 days.
<i>Cryptolepis buehneri</i> Roem. & Schult.	Asclepiadaceae	Adavipala teega	Arthritis	Take leaves of <i>Cryptolepis buehneri</i> and <i>Cissampelos grandifolia</i> and prepare chutney and can eat twice a week for 3-4 weeks.
<i>Curculigo orchoides</i> Gaertn	Hypoxidaceae	Nela thadi	Impotency	During bed time give 5g roots powder with 100ml goat milk internally for 15 days.
<i>Curcuma longa</i> L.	Zingiberaceae.	Pasupu	Cold	Twice a day apply Rhizome paste on the top of the head of children by mixing castor oil for 3 days.
			Cuts and wounds	Immediately apply Rhizome paste on the cuts to control bleeding.
<i>Cymbopogon martini</i> (Roxb.) Wets.	Poaceae.	Nimma gaddi	Lice on head	Make paste by grinding the leaves of <i>Cymbopogon martini</i> and <i>Annona squamosa</i> together and apply on hair daily once for 2 – 3 days.
<i>Cyperus rotundus</i> L.	Cyperaceae.	Thunga gaddi.	Stomach pain	Sun dry 10g of stem bark of <i>Holarrhena anti dysenterica</i> , 10g of tuber, and 10g of <i>zingiber officinalis</i> and make powder. Internally give 30g powder along with 250ml of butter milk twice a day until cured.
<i>Dalbergia paniculata</i> Roxb.	Fabaceae.	Pacharugu.	Hair falls and dandruff	To control hair, fall due to dandruff apply stem bark paste on hair once in a week.
<i>Datura metel</i> L.	Solanaceae.	Nalla ummetha.	Arthritis:	Apply leaf paste on the affected part daily once externally for until cured.
<i>Desmodium gangeticum</i> (L.) DC.	Fabaceae.	Deyyam jada	Fever	Given internally daily twice 10ml decoction prepared by 50g fresh roots along with 3 peppers in 200ml of water and should be given for 3 – 4 days.
<i>Dioscorea bulbifera</i> L.	Dioscoreaceae.	Nela dumpa.	Tumors	Daily once applies tuber paste externally for 3 – 4 days.
<i>Dioscorea pentaphylla</i> L.	Dioscoreaceae	Genusugaddalu	Indigestion	Daily given twice 20ml tuber juice internally for 2 days.
<i>Dodonaea angustifolia</i> L.f., Suppal	Sapindaceae	Puli vailu.	Sprains	Daily once placed roasted fresh tender leaves on the affected part for 3 – 4 days.
<i>Eclipta prostrata</i> (L.) L.	Asteraceae.	Gunta kalagaraa	Stress relief	Make paste from leaves and apply on the hair for one time only

			Anaemia	Prepare chutney with leaves and eat with rice once a week for 3-4 weeks
<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae.	Usiri.	Indigestion	After food give 5g fruit powder internally for 2 – 3 times a day. Burning sensation while urination: Morning and night give 10g fruit powder along with sugar internally till cured.
<i>Enicostemma axillare</i> (Lam.) Raynal.	Gentianaceae.	Resika.	Stomach pain	As a single dose give 5ml plant extract along with 2g of black pepper powder internally
<i>Euphorbia geniculata</i> Orteg.	Euphorbiaceae.	Pedda pala alam	Weakness	Daily once feed the leaves as green fodder to the sick animal for quick recovery for a month.
<i>Euphorbia hirta</i> L.	Euphorbiaceae.	Pacha botla.	Conjunctivitis	On the affected eye apply 1 – 2 drops of milk sap for 3 days
			Menstrual pain	During menstrual period 20ml leaf juice is given internally
			Scabies	On the affected part of the body apply leaf juice by mixing 1 g of Sulphor externally once daily for 3 – 4 days.
<i>Euphorbia tirucalli</i> L.	Euphorbiaceae	Manchi jemudu.	Piles	For complete cure of pile in children. Milk sap is mixed with turmeric powder and apply once a day for a week.
<i>Feronia elephantum</i> Correa.	Rutaceae.	Velaga	Diarrhoea	Only one time give internally young fruit pult.
<i>Ficus bengalensis</i> L.	Moraceae	Marri.	Impotency	Shade dries the bandful of young leaf buds and makes powder.
<i>Ficus hispida</i> L. f.	Moraceae.	Brahma medi.	Mad dog bite	Daily once given 20ml fruit juice internally for 2 days.
<i>Ficus racemosa</i> L.	Moraceae.	Medi	Stomach pain	Daily twice give 20ml stem bark juice internally for 3 days.
<i>Ficus religiosa</i> L.	Moraceae.	Ravi chettu	Impotency	Daily once given 5g fruits powder with cow milk for 1 month.
			Skin diseases	Daily once applies stem bark paste on the affected part till cured.
<i>Haldinia cordifolia</i> (Roxb.) Ridsdale	Rubiaceae.	Bandaru.	Dysentery	Twice a day give 20ml stem bark juice till cured.
<i>Helicteres isora</i> L.	Sterculiaceae.	Nuli thada.	Scabies	Take fruits and dry them in sunlight and make powder. Daily once apply powder by mixing coconut oil externally on the affected part until cured.
<i>Heliotropium indicum</i> Linn	Boraginaceae.	Thelu kondi	Scorpion sting	Extract the juice from leaf and apply on the affected area once a day for 3 days
<i>Hemidesmus indicus</i> (L.) Schult.	Periplocaceae.	Sugandi pala	Weakness	Daily drink 1 tea spoonful of power mixed in a cup of tea for a month.
<i>Holarrhena pubescens</i> (Buch. - Ham.) Wall. Ex G. Don	Apocyanaceae.	Nallapalagodisa	Cuts and Wounds	In case of small cuts apply fresh turmeric paste and a sap of milk is applied on the portion of cut and wounds to control bleeding.

<i>Holoptelea integrifolia</i> (Roxb.) Planch.	Ulmaceae.	Nemalichettu.	Arthritis	Collect stem bark and make paste then boil with sesame oil for 30 minutes and then apply when it is luke warm externally daily once until cured.
<i>Holostemma adakodien</i> Schultes	Asclepiadaceae	Adavi palateega	Sprains	Latex applies externally on affected area daily once till cured.
<i>Jatropha curcas</i> L.	Euphorbiaceae	Nepalam	Cuts	To control bleeding leaf paste is applied externally on cuts.
<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Chitti nepalam	Scabies	Daily once applies leaf paste externally on the affected part.
<i>Justicia adathoda</i> L.	Acantaceae	Addasaram	Cough	Prepare decoction from the leaf, 100ml leaf decoction should be given with honey internally 2 times i.e., morning and evening to get relief from cough.
<i>Justicia procumbens</i> L	Acanthaceae	Papadaku	Arthritis	Boil 100 ml of coconut oil with grinded 20gr of whole plant for five minutes and apply externally on affected part until cured.
			Cuts and burns	To control from bleeding and swelling apply fresh plant juice externally till it cured.
<i>Lagerstroemia parviflora</i> Roxb.	Lythraceae.	Chennangi	Arthritis	Daily once applies stem bark paste externally for 2 weeks.
<i>Lannea coromandelica</i> (Houtt.) Merr.	Anacardiaceae	Gumphena	Dysentery	The juice prepared by stem bark 10ml is given internally daily once for two to three days.
			Fracture	Prepare juice with stem bark and mixed into equal amount of goat milk. 500ml of mixture is forcibly drenched once in a week for 3 week or apply vitex oil on fractured part after setting up the bone and tie around with a cloth.
<i>Lantana camara</i> L.	Verbenaceae	Murikimalle	Cuts and wounds	Take handful leaves and mix turmeric and them grind. Daily twice apply this paste externally for 2 – 3 days.
<i>Lawsonia inermis</i> L.	Lythraceae.		Rheumatoid arthritis, Ulcers etc.	Henna leaves, flowers, seeds, stem bark and roots are used in traditional medicine to treat a variety of ailments as rheumatoid arthritis, headache, ulcers, diarrhea, leprosy, Henna symbolizes fertility and also used for alleviating jaundice, skin diseases, venereal diseases, smallpox and Spermatorrhoea. The bark is applied in the form of a decoction to burns and scalds. It is given internally in a variety of affections, such as jaundice, enlargement of the spleen, calculus, as an alternative in

				<p>leprosy and obstinate skin affections.</p> <p>Root is considered as a potent medicine for gonorrhoea and herpes infection. Root is astringent may be pulped and used for sore eyes. Pulped root may also be applied to the heads of children for boils. The root is supposed to be useful in treatment of hysteria and nervous disorders.</p> <p>Seeds in powdered form are good medicine for liver disorders and associated problems.</p>
<i>Leonotis nepetifolia</i> (L.) R. Br.	Lamiaceae	Rana bheri.	Skin allergy	Once in a day apply root paste on the affected area for 3 days.
<i>Leucas aspera</i> (Willd.) Link	Lamiaceae.	Thummi.	Abdominal pain	Boil whole plant into 500ml water for 5 minutes. (20 ml Decoction is given for one time) only for me time gives 20ml filtered decoction.
			Psoriasis	Daily once applies externally on the affected part. Leaf juice boil in coconut oil until cured.
<i>Madhuca longifolia</i> (Koen.) MacBr.	Sapotaceae	Ippa.	Abdominal pain	Take handful fresh stem bark of <i>Buchanania Lanza</i> , <i>Madhuca longifolia</i> and <i>Azadirachta indica</i> and then add 10g of dried ginger and pepper. Squeeze the juice by pounding them all twice a day give 20ml juice internally for 2 days.
<i>Mangifera indica</i> L.	Anacardiaceae	Maamidi	Diarrhea	Soak slices of young fruits in water for whole night and 100ml of water is given early in the morning to get relief diarrhea.
<i>Martynia annua</i> L.,		Telukondi.	Lice on bed	Bring bunch of leaves and place it on bed for whole day. Lice will be stuck to these leaves and then remove, if necessary, repeat this process.
			Tooth ache	Take roots of <i>Martynia annua</i> and make paste and use it as tooth paste daily till cured.
<i>Maytenus senegalensis</i> (Lam.) Excell.	Celastraceae	Danthe	Burning sensation while urination	Early morning chew handful young leaves along with 2g fruits of <i>cuminum cyminum</i> for 3 days.
<i>Momordica charantia</i> L.	Cucurbitaceae	Kakara teega	Abdominal pain	For one day give 1 tea spoonful of leave extract internally twice a day.
			Diabeti	fruit juice thrice a day.
<i>Morinda pubescens</i> Smith in Rees.	Rubiaceae	Togara.	Jaundice	Collect 10g stem bark along with equal quantity of stem bark of <i>Oroxylum indicum</i> and whole plant of <i>Phyllanthus nururi</i> and extract juice. Orally give 20ml of this juice twice a day for 1 week.

<i>Moringa oleifera</i> Lam.	Moringaceae.	Mulaga.	Night blindness	Once a week give chutney prepared by fresh leaves for 6 months.
			Swelling	Externally apply stem paste as an ointment externally for 3 days.
			Jaundice	Once a day give 30ml leaf juice for a month
			Controlling BP	To control BP, give leaf juice internally.
<i>Mucuna pruriens</i> (L.) DC.	Fabaceae.	Teega dula gondi.	Spermatorrhoea	During bed time at night give seed powder mixed into a glass of milk internally for one month.
<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	Parijatham	Fever	Daily once given 50ml leaf juice internally till cured.
<i>Occimum sanctum</i> L.	Lamiaceae.	Thulasi.	Cough	Make leaf juice 5ml and is given along with 1 tea spoonful honey daily once in the morning and before going to bed 3 – 4 days.
			Ringworm	Daily once applies leaves paste along with turmeric powder on affected part till cured
<i>Pergularia daemia</i> (Forssk.) Chiov.	Asclepiadaceae	Gutaguta aaku	Cough and cold	Administered 3 drops of leaf juice daily once for 3days orally.
<i>Phyllanthus amarus</i> Schum. &Thonn.	Euphorbiaceae	Nela usiri	Jaundice	Give 10ml root or whole plant juice along with 1 glass of cow milk internally once in a week for 4 weeks. During the course of treatment avoid eating meat and fish.
<i>Phyllanthus reticulatus</i> Poir.	Euphrobiaceae	Pulisheru	Bone fracture	For quick relief smeared leaf paste along with seed paste of <i>Gossypium herbacium</i> around fractured area.
<i>Physalis minima</i> L.,	Solanaceae	Budda budasa.	Swellings	Apple leaf paste boiled in water externally when it is Lukewarm daily once until cured.
<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Tella chitramulam.	Tooth ache	Daily chew the twig of <i>plumbago zeylanica</i> for 2 days
<i>Pongamia pinnata</i> (L.) Pierre.	Fabaceae.	Kanuga chettu.	Stomach pain	For one day give 10ml stem bark juice orally in the morning and evening
			Snake bite	For one time only give one table spoonful stem bark juice with one glass of water orally.
<i>Pueraria tuberosa</i> (Roxb. ex Willd.)DC.	Fabaceae.	Nela gummadi.	To increase Mother's milk	The mother who couldn't feed her infant because of less milk. Give 1 tea spoonful tuber powder along with milk daily to increase milk production in mother to feed their baby.
<i>Punica granatum</i> L	Lythraceae	Danimma.	Stomach pain	Twice a day give 10g of fruit coat powder with honey until cured.
<i>Ricinus communis</i> L.	Euphorbiaceae	Amudam	Backache	Once in a day apply seed oil externally until cured.

			Jaundice:	In the early morning with empty stomach took 100ml juice prepared out of young leaves and mixed into jiggery for sweetness
<i>Sarcostemma acidum</i> (Roxb.) Voigt.	Asclepiadaceae	Pudakachaman	Arthritis	Prepare sap of milk and apply daily once until cured.
			Ear ache	Pour 2 drops of milk sap in the ear daily one time till it cured.
<i>Semecarpus anacardium</i> L.	Anacardiaceae	Jidi	Passing blood through urination	Take 5g of <i>Piper nigrum</i> and 50g of stem bark and prepare juice. 10ml juice and 100ml of water mix should be given internally thrice a day.
			Sexually transmitted disease (STD)	Take 2g of <i>piper nigrum</i> , 1seed of <i>Semecarpus, anacardium</i> , 10g root bark of <i>plumbago zeylanica</i> , 1g rhizome of <i>Zingiber officinalis</i> grind them all properly and then add 1 teaspoon full cow ghee. 20ml of this mixture is given internally once a day for two days.
			Arthritis	Take stems bark of <i>Semecarpus anacardium</i> and <i>Bauhinia racemose</i> and prepare decoction. 20ml of decoction should be given internally once a day for 2 days.
<i>Sida acuta</i> Burm.f. Borss.	Malvaceae.	Seekiri	Stomach pain	Daily twice gives 10ml root decoction internally for 3 days.
			Tumours	Apply leaf paste by mixing camphor daily once for a week
<i>Sida cordata</i> (Burm.f) Borss.	Malvaceae	Gayapu aku.	Fever	Daily twice given 10ml root decoction until cured.
<i>Solanum nigrum</i> L.	Solanaceae	Kamanchi	Scorpion sting	On the affected part apply leaf paste externally daily once till cured.
			Arthritis	On the affected part of the body daily once apply leaf externally until cured
<i>Solanum xanthocarpum</i> Schrad. & Wendl.	Solanaceae	Mullavankaya.	Scabies	Once a day externally apply leaf paste for a week.
			Hairfall	Apply once a day fruit paste externally on the affected part till cured.
<i>Soymida febrifuga</i> (Roxb.) A. Juss.	Meliaceae.	Somi.	Foot rot	Collect the stem bark of <i>Soymida febrifuga</i> and <i>clistanthus collinus</i> and put them in wet pit. Daily twice allow the affected animal to stand on it for 15 minutes until cured.
			Fever	100ml stem bark juice Drench internally daily once until cured.
<i>Sphaeranthus indicus</i> L.	Asteraceae	Bodda tarapu	Wounds	Apply the paste prepared by leaves on the affected area until cured
			Head ache	To get rid of head ache prepare decoction with dried inflorescence

				(head) with water and it should be taken internally by adding sugar as black team.
<i>Streblus asper</i> Lour.	Asteraceae		Wounds	Apply the paste prepared by leaves on the affected area until cured
			Head ache	To get rid of head ache prepare decoction with dried inflorescence (head) with water and it should be taken internally by adding sugar as black team
<i>Strychnos nux-vomica</i> L.,	Loganiaceae	Mushti.	Stomach pain	To control stomach pain, give 2mg seed powder mixed into 200ml water and give internally in morning and evening.
<i>Strychnos potatorum</i> L.	Loganiaceae.	Chilla chettu.	Impotency	Once in a week chew a nut for 4 weeks.
<i>Syzigium cumini</i> (L.) Skeels.	Myrtaceae.	Neredu.	Diabetic	To get rid of diabetic eat the fruits which are fully riped.
<i>Tephrosia purpurea</i> (L) Pers.	Fabaceae.	Vempali.	Bloat	In a single dose give 200ml fresh root extract along with 500ml water internally
<i>Terminalia arjuna</i> (Roxb. ex D. C.) Wt. & Arn.	Combretaceae	Tella maddi.	Anaemic	Take one glass of water or cow / goat milk and add 1 tea spoonful powder and it should be given for 3 months.
			Cardiac tonic	The stem bark extract is given daily for strengthening the heart functions and used it as a cardiac tonic.
<i>Terminalia bellerica</i> (Gaertn) Roxb.	Combretaceae	Tandra	Stomach pain	Take seed powder of one tea spoonful and is given with sugar or honey 3 times a day for 2 days.
<i>Terminalia chebula</i> Retz.	Combretaceae	Karaka chettu,	Dry cough	Given twice a day for 3 days one tea spoonful fruits powder of terminalia chebula.
<i>Tribulus terrestris</i> L.,	Zygophyllaceae.	Palleru.	Impotency	Make powder by grinding 10g seeds along with 10g dry roots of <i>Withania somnifers</i> . During bed time give 1 tea spoonful powder internally daily with milk.
<i>Tridax procumbens</i> L.	Asteraceae	Nalla alam	Fresh cuts	Turmeric powder and leaves paste is mixed and apply twice a day for 3-4 days.
<i>Tylophora indica</i> (Burm.f.) Merrill	Asclepiadaceae	Meka meyani teega	Venereal disease	Take 7 leaves and 7 fruits of black pepper and grind to make pills make pills of 5g each and it should be given orally once in a day for 5 days
<i>Vitex negundo</i> L.	Verbenaceae.	Vayilaku.	Paralysis	Take 50g leaves along with 2g of piper nigrum, 1 fruit of wood fordia fruticosa, and 7 leaves of piper betle grind them all and make balls. Every alternate day give 20g

				bolus. During medication avoid eating fish.
			Arthritis	Daily once applies leaf paste externally until cured
<i>Wattakaka volubilis</i> (L. f.) Stapf.	Asclepiadaceae	Bandi guriya	Swellings	Prepare decoction with leaves in water and apply externally on the affected area when it is slightly warm.
			Athritis	Leaves decoction of about 50ml is given orally daily once for 30 days.
<i>Woodfordia fruticosa</i> (L.) Kurz.	Lythraceae.	Jajuki.	Gas trouble	Daily once give 10ml flower juice internally for 2 days.
			Pralysis	Collect 1 fruit along with 50g leaves of <i>Vite negundo</i> , 7 leaves of <i>Piper betle</i> . 2g of <i>Piper nigrum</i> and grind it to make bolus. In the morning every alternative day give 20g bolus for 1 month. During the course of treatment avoid fish and meat.
<i>Wrightia tinctoria</i> Br.	Apocynaceae	Tellapala kodise	Poriasis	Coconut oil and leaves are decocted and applied externally daily one-time until cured.

## RESULTS AND DISCUSSION

The present study contains the first-hand information gathered by the author from January 2017 – December 2018 (Two years) on medicinal plants used by tribal communities like Kolams, Naikpods, Pardhans, Gonds, Thotis, Chenchus and Mathuras of Nirmal district. The author has documented over 139 species belonging to 38 families (Amaranthaceae<sup>1</sup> Apiaceae<sup>1</sup> Asclepiadaceae<sup>1</sup> Asteraceae<sup>1</sup> Aristolochiaceae<sup>1</sup> Acanthaceae<sup>1</sup> Agavaceae<sup>1</sup> Alangiaceae<sup>1</sup> Amaranthaceae<sup>4</sup> Anacardiaceae<sup>1</sup> Annonaceae<sup>1</sup> Aristolochiaceae<sup>1</sup> Asclepiadaceae<sup>1</sup> Asteraceae<sup>1</sup> Barringtoniaceae<sup>1</sup> Basellaceae<sup>1</sup> Bombacaceae<sup>1</sup> Boraginaceae<sup>1</sup>.Bursaceae<sup>1</sup> Caesalpiniaceae<sup>4</sup> Capparidaceae<sup>2</sup> Celastraceae<sup>1</sup> Cochlospermaceae<sup>1</sup> Convolvulaceae<sup>1</sup> Cucurbitaceae<sup>4</sup> Euphorbiaceae<sup>5</sup> Fabaceae<sup>6</sup> Flindersiaceae<sup>1</sup> Liliaceae<sup>2</sup> Malvaceae<sup>1</sup> Meliaceae<sup>1</sup> Menispermaceae<sup>1</sup> Mimosaceae<sup>3</sup> Nyctaginaceae<sup>1</sup> Oxalidaceae<sup>1</sup> Papaveraceae<sup>1</sup> Rubiaceae<sup>2</sup> Rutaceae<sup>1</sup> Sapindaceae<sup>1</sup> Verbenaceae<sup>2</sup> Vitaceae<sup>1</sup>) and has chosen 30 locations, which include Tribal Gudems in remote areas in the core forest zones of the District. The tribal communities of Nirmal district are known for their efficient “art of healing” which is most ancient practiced by them from time to time. Recently the art of healing is practiced only by few individuals in the community; these practitioners are called as Vidhyas/ Vejjus/ Pujaris/ Vaddegodus/ Gunyas etc. The Tribal Art of Healing is practiced by the tribal doctors gained by them from their fore fathers from generations to another. Non- medicinal uses of plants pertaining to food, fodder, fuel, fiber, gum and other miscellaneous uses have also been studied.”NON-MEDICINAL USES OF PLANTS” Tribes of Nirmal district use forest produces for various purposes other than medicinal plants such as food, fiber, fuel, gum, oils, broom sticks, toys, agricultural use, building huts, fodder for animals, flowers use in the festivals to offer and decorate gods and goddess, marriages, birth and death ceremonies, belief and taboos etc..”WILD FRUITS, SEEDS AND NUTS” Tribal communities of Adilabad district, collect wild edible fruits seasonally which are available in the local forests. To over come the food shortage of tribal people they use forest resources for food which include wild fruits, vegetables, tubers and nuts etc. which are greatly contribute to their nutrition and diet. Among the tribal communities in the district, Gonds and Kolams are highly depend on forest produces particularly collection of wild fruits, nuts, seeds to get food and earn income as well. Tribal communities collect seasonally available fruits, seeds and nuts from time to time from the forest and store them for future requirements that includes



the plant produces of *Aegle marmelos*, *Anacardium occidentale*, *Annona reticulate*, *Annona squamosa*, *Borassus flabellifer*, *Bridelia retusa*, *Buchanania axillaris*, *Buchanania lanzan*, *Careya arborea*, *Cassia fistula*, *Cissus vitiginea*, *Cordia dichotoma*, *Diospyros chloroxylon*, *Diospyros melanoxylon*, *Garuga pinnata*, *Gardenia gummifera*, *Gradenia latifolia*, *Grewia tiliifolia*, *Limonia acidissima*, *Litsia glutinosa*, *Litsia glutinosa*, *Maba buxifolia*, *Mangifera indica*, *Schleichera oleosa*, *Semicarpus anacardium*, *Strychnos potatorum*, *Syzygium cumini*, *Tamarindus indica*, *Terminalia alata*, *Xylia xylocarpa* and *Zizipus mauritiana*.

“WILD TUBERS AND LEAFY VEGETABLES” Among the tribal communities of the district, Kolams and Gonds use seasonally available wild tubers and vegetables for home consumption to meet their nutrient requirements. During winter season they collect tubers like *Asparagus racemosus*, *Chlorophytum arundinaceum*, *Corallocarpus epigaeus*, *Curculigo orchioides*, *Dioscorea bulbifera*, *Dioscorea pentaphylla* and *Discorea alata*. In the rainy season they also use tender leaves of *Achyranthes aspera*, *Aegle marmelos*, *Aerva lanata*, *Balanites roxburghii*, *Commelina benghalensis*, *Emilia sonchifolia*, *Gymnema sylvestre*, *Limonia acidissima*, *Madhuca indica*, *Momordica charantia*, *Moringa concanensis*, *Oroxylum indicum*, *Phyllanthus emblica*, *Pupalia lappacea*, *Terminalia bellirica* and *Terminalia chebula* as leafy vegetables.”

OIL SEEDS” Tribal communities extract oil from the oil seeds for edible and non- edible purposes. Edible oil are *Arachis hypogea*, *Carthamus tinctoris*, *Helianthus annua*, *Gossypium herbacium*, *Guizotia abyssinica*, *Madhuca indica*, *Ricinus communis*, *Schleichera oleosa*, *Sesamum indicum*, where as non- edible oil species like, *Jatropha curcas*, *Pongamia pinnata* are used by the tribal communities for their traditional lamps and these oils are also used as biodiesel in the urban societies.”

FODDER PLANTS” Tribal communities are completely depended on wild fodder species to feed their animals. Tree species are mostly lopped by the tribals to feed their cattle and goats. The species which are lopped for green leaves as fodder in the summer are *Acacia catechu*, *Acacia nilotica*, *Albizia lebbek*, *Butea monosperma*, *Ficus tinctoria*, *Azadirachta indica*, *Ficus virens*, *Holoptelea integrifolia*, and *Mangifera indica*. During rainy and winter season species like *Bambusa arundinacea*, *Bauhinia racemosa*, *Cassia fistula*, *Gmelina arborea* and *Moringa concanensis* are used as fodder. Climber species like *Coccinia grandis*, *Pueraria tuberosa* and shrub species like *Ixora pavetta*, *Solanum xanthocarpum* are used in winter and rainy season as fodder. Herbs and grasses like *Achyranthes aspera*, *Asparagus racemosus*, *Boerhavia diffusa*, *Cassia occidentalis*, *Cocculus hirsutus*, *Dioscorea oppositifolia*, *Eclipta prostrata*, *Ipomoea carnea*, *Trianthema portulacastrum* and grass species of *Cynodon dactylon* were found to be used for their animals.”

ECONOMICALLY USEFUL PLANTS” “GUMS AND RESINS” Certain plant species will produce gum and resin which are collected by the tribal people of the district. The major species like *Acacia leucophloea*, *Albizia odoratissima*, *Albizia lebbek*, *Anogeissus latifolia*, *Bombax ceiba*, *Boswellia serrata*, *Cochlospermum religiosum*, *Gardenia gummifera*, *Gardenia resinifera*, *Lannea coromandelica*, *Limonia acidissima*, *Prosopis cineraria*, *Pterocarpus marsuperum* and *Soymida febrifuga* are collected by Gonds and Pardhans and sell in the local markets to get additional income.”

PAPER PLATES AND BEEDI LEAVES” Tribal communities largely depend on collection of minor forest products particularly leaves during summer and they would earn good income to support their families. The leaves of *Diospyros melanoxylon* are one of the major forest products which are collected by all the local people between March and June. The leaves of *Diospyros melanoxylon* are used to wrap tobacco/ tambaku called as beedis by the rural women in the district. It is one of the large-scale businesses in the non-timber forest produce of the district, which runs in to millions of rupees. The local women folk use leaves of *Bauhinia vahlii* and *Butea monosperma* to make meal plates and earn some money to the family.”

FIBERS, BROOM STICKS AND FENCING MATERIALS” Local tribals use certain stem fibers ‘to make ropes’ particularly species of *Bauhinia racemosa*, *Eriolaena hookeriana*, *Hardwickia binata*, *Crotalaria juncea*, *Borassus flabelliformis*, *Helicteres isora*, are used mostly by them. *Bambusa arundinacea*, *Dendrocalamus strictus* and *Vitex negundo* species are used to make fencing around their houses and cattle sheds and also used to weave bamboo baskets. Tribals use species like *Phoenix sylvestris*, *Sida acuta*, *Imperata cylindrical*, *Thysanolaena maxima* and *Typha species* to prepare broom sticks for their use and also to sell in the local market to generate some money for their living.

“NIRMAL TOYS INDUSTRY” The artisans at Nirmal produce articles of artistic content and features

reflecting the local animals, birds, fruits and vegetable which in appearance look as real as the natural pieces. Toy making is a well-known industry. The 'Nirmal Toys' has a specific heritage tag popular for their ethnic beauty and aesthetic content throughout the country. Recently they are popular even in international market. Nirmal toys are made from the woods of *Givotia rottleriformis*, *Givotia moluccana*, *Gyrocarpus americanus*, and *Wrightia tinctoria*. They deserve yet another famous craft is 'Dhokra craft' popular along with Nirmal Toy industry in the district. This craft is practiced in villages like Ushagaon and Kasalguda of the district. The Dhokra casting artisans are living in this district since last 100 years and producing tribal ornaments Zoomorphic figures in particulars horses, elephants and birds. "PROTOCOL FOLLOWED BY THE TRIBALS IN MEDICINAL PLANTS COLLECTION:" Tribal healers follow certain norms while collecting plant parts to use in the drug preparation. The leaves of *Acalypha indica* are never plucked for medicine without having bath and worshiping the plant. Tribal healers believed the tree *Ficus bengalensis* as their mother; often they offer a wild fruit to the tree before plucking the parts like leaves, bark, fruits etc for medicine. Healers do 3 rounds of pradakhin around the *Ficus religiosa* before collecting plant parts from the tree. Healers never root out the tap root for medicine often they use aerial root for medicine so that the plant will survive and it will be used in the future. Healers when they use tubers in their drug preparation, they never remove the entire tuber from the ground they left some of the tubers inside the ground and cover with soil for the survival of the plant. The whole plant of *Vernonia cinerea* is collected by performing pooja a day before Pushyami nakshathram and is collected which is used generally in the preparation of an amulet to ward off evil spirit.

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## Ethnobotany of Stem Bark of Some Medicinal Plants of Adilabad District, Telangana State, India

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### Abstract:

The paper enumerates 56 medicinal plants belonging to 47 genera families. Whose stem Barks are used for ethnobotanical purpose by the primitive Tribes Groups of Adilabad district Telangana state India, three plant species 70 practices were found to be new

**Key words:** Ethnobotany, Stem bark, Primitive Tribal groups, Adilabad district

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### I. Introduction:

Bark is the outer hard layer covering the of the plant from ethnobotanical plant. From ethnobotanical point view it has immense importance in day-to-day life of the people thought the world. Ethnobotanical uses of different plants were studied several workers (Ambashta 1986. Banerjee 1977, Caius 1935, chopra.et.al 1969.Islam 200, Rao et.al 2000. Rao and Reddi 2010and Rao et.al 2006), the utility of bark for making ropes, cordges, dyes. resine, medicines etc. in different parts of the country by different tribal inhabitants was been done so for on the uses of bark obtained from different parts of different species of the district.

Adilabad is famous for its rich cultivation of cotton. Hence, Adilabad is also referred as "White Gold City". It is located about 304 kilometres (189 mi) north of the state capital, **Hyderabad**, 150 kilometres (93 mi) from **Nizamabad** and 196 kilometres (122 mi) from Nagpur

The district derives its name from Adilabad, its headquarters town which was named after the ruler of Bijapur, Ali Adil Shah. The district was for long not a homogenius unit and its component parts were ruled at different periods by nasties namely, the Mauryas, Staavahanas, Vakatakas, Chaludyasof Badami, Rashtrakututs, Chalukyias of Kalyani, Mughals, Bhosle Rajes of Nagpur and Asaf Jahis, besides the Gond Rajas of Sirpur and Chanda. Originally this was not full-fledged district but a sub-district named Sirpur-Tandur which was created in A.D. 1872 with Edlabad (Adilabad), Rajura and Sirpur as its constituent talukas. In 1905, an independent district with headquarters at Adilabad was formed. Due to the district's reorganization in October 2016, Adilabad was divided into four districts: Adilabad, KumramBheem Asifabad district, Mancherial district, and Nirmal district.Red and black soil are both found in Adilabad district though black soil predominates, accounting for almost 72% of the soil in the district. The mineral resources are mainly limestone and manganese ore.

### II. Material and Methods

Ethnobotanical survey of the inhabited areas of the district was conducted during 20017-19 covering all seasons. Information was obtained through field interviews with traditional healers. The medicinal uses and mode of administration were gathered from tribal medicine men and herbalists and compared with relevant literature. Each medicinal practice was verified and cross-checked. Plant specimens were collected, identified and deposited in he Herbarium of the Department of Botany, Osmania university Hyderabad. Ethnomedicinal plant species used by the for curing various diseases are listed below in alphabetical order with botanical and local names and English names, uses and the methods of preparation and administration of the drugs.

S.no	Botanical name	Family name	Vernacular name	Part used	Ailment	Formulation
1.	Acacia nilotica (L.) Willd.	Mimosaceae	Nalla thumma	Black babul	Piles	Stem bark paste mixed with half cup of water is administered once a day till cure. *Swelling of eyes: Boiled stem bark paste is applied on the eyebrows.
	Aegle marmelos (L.) Correa	Rutaceae	Bael tree	Bark paste	indignation	Bark paste mixed with half cup of water is administered twice a day till

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						cure
	Aganosma caryophyllata (Roxb. ex Sims) G. Don	Apocynaceae	Saluvamada Chettu	Stem bark	Malaria, fits, chicken pox, witchcraft and antidote to poison	Stem bark along with that of <i>Grewia tiliifolia</i> mixed with old tamarind stored for 3 years is ground with crab and the skin of monitor lizard (Veranus) is made into tablets and administered orally daily twice
	Alangium salvifolium (L. f.) Wang.	Alangiaceae	Ooduga chettu	Stem bark Stone mango	Neurological weakness	Stem bark paste mixed with root paste of <i>Achyranthes aspera</i> is administered twice a day till cure
	Alstonia scholaris (L.) R. Br	Apocynaceae	Edakulapala	Bark paste Galactagogue	Galactagogue	Devil tree Galactagogue: Bark paste is administered with half cup of water.
	Alstonia venenata R. Br	Apocynaceae	Pala mandhu chettu	Dried stem barks	Scabies and boils	Dried stem bark powder mixed with coconut oil is applied on the affected parts.
	Annona reticulata L.	Annonaceae	Ramaphalam	Stem bark	Sciatica	Stem bark paste with that of <i>Jatropha curcas</i> and root pastes of <i>Clerodendrum viscosum</i> and <i>Solanum torvum</i> mixed with half cup of water is administered daily twice till cure.
	Artocarpus heterophyllus Lam	Moraceae	Jack fruit	Stem bark	Body pains	Stem bark paste mixed with half cup of water is administered twice a day for 2 days
					Dysentery	Stem bark paste mixed with that of <i>Syzygium cumini</i> is administered with half cup of water twice a day for 2 days.
					Wounds	Stem bark paste is applied on affected parts. Latex is used for bird-trapping
	Azadirachta indica A.Juss	Meliaceae	Yepa chettu	Stem bark	Dysentery	Stem bark paste mixed with half cup of water is administered twice a day for 2 days.
					Stomach pain	Stem bark paste along with tuberous pastes of <i>Acorus calamus</i> and <i>Rauvolfia serpentina</i> mixed in half cup of water is administered twice a day for 2 days.
	Bambusa arundinacea (Retz.) Roxb	Bambusaceae	Bongu veduru	Thorny bamboo	Diabetes	Tender stems are eaten as curry once a day till cure
					Piles	Stem bark ground with roots of <i>Asparagus recemosus</i> is administered in 5 mg once a day for 3 days
	Bauhinia purpurea L	Caesalpiniaceae	Pink bauhinia	Stem bark	Asthma	Stem bark paste mixed with half cup of water is administered twice a day for 5 days.
					Dysentery	Stem bark paste mixed with half cup of water is taken twice a day till cure
	Bauhinia vahlii Wight & Arn	Caesalpiniaceae	Addachettu	Stem bark	ropes, mats (Other uses)	fibre is used in the preparation of traditional ropes, mats and cordage
	Boehmeria flatyphylla Jacq	Urticaceae	Karagadi chettu	Stem bark	Tonsils	Stem bark paste is applied on the affected parts. Uses: Stem bark fibre is used for ropes.
	Bombax ceiba L	Bombacaceae	Boorugu	Silk cotton tree	Sprains	Stem bark paste is applied on affected parts.
	Callicarpa arborea L	Verbenaceae	Badigachettu	Stem bark	Helminthiasis	Stem bark paste along with tuber paste of <i>Rauvolfia serpentina</i> mixed with half cup of water is administered twice a day till cure
	Careya arborea Roxb	Barringtoniaceae	Kummadi	Stem bark	Jaundice Ward off evil spirits	Stem bark paste mixed with half cup of water is administered thrice a day for 2 days.
						Stem bark is kept in the copper foil and buried in front of the house to ward off evil spirits
	Casearia elliptica	Flacourtiaceae	Girugudu	Stem bark	Muscular	Stem bark paste mixed with a cup of

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	Willd				pain	water is administered twice a day till cure
	<i>Celastrus paniculatus</i> Willd	Celastraceae	Palleru thivva	Black oil tree	Burning sensation	Stem bark paste mixed with half cup of water is administered twice a day
	<i>Cipadessa baccifera</i> (Roth) Miq	Meliaceae	Paradonda,	Stem bark	Allergy	Stem bark paste mixed with half cup of water is administered twice a day
Emetic					Stem bark paste is given once	
Fever					Stem bark paste along with leaf paste of <i>Cassia occidentalis</i> is administered daily twice for 3 days.	
					Jaundice	Stem bark paste along with tuberous paste of <i>Mirabilis jalapa</i> mixed with half cup of water is administered twice a day for 3 days.
	<i>Clerodendrum philippinum</i> Schr	Verbenaceae	Phidithiki mokka	Stem bark	Jaundice	Stem bark paste along with <i>Mirabilis jalapa</i> tuber paste is administered twice a day for 2 days
	<i>Dalbergia paniculata</i> Roxb	Fabaceae	Chitakura chettu	Stem bark	Toothache	Stem bark paste is applied on effected teeth and brush the teeth with tender shoots once a day for 3 days.
	<i>Dalbergia volubilis</i> Roxb	Maredu tivva	Maredu tivva	Stem bark	Blood dysentery	paste mixed with half cup of water is administered thrice a day for 2 days
					Menorrhagia	Stem bark paste mixed with half cup of water is administered twice a day till cure.
	<i>Dillenia indica</i> L	Dilleniaceae	Revadachettu	Stem bark	Piles	Stem bark pounded with paddy is cooked and administered in one glassful in the morning and evening till cure.
	<i>Diospyros sylvatica</i> Roxb	Ebenaceae	Pilli chettu	Stem bark	Fits	: Stem bark paste mixed with half cup of water is administered on full moon day followed by half-moon and full moon days
	<i>Euphorbia ligularia</i> Roxb.	Euphorbiaceae	Akujemudu	Stem bark	Arthritis	Stem bark paste mixed with coconut oil is applied on affected parts till cure
					Ulcer in stomach	Stem bark paste, cooking oil and one egg is given with <i>Panicum sumatrense</i> once a day for 3 days
	<i>Euphorbia nivulia</i> Buch	Euphorbiaceae	Akujamudu	Stem bark	Back pain	Stem bark paste mixed with half cup of water is administered twice a day for 3 days.
	<i>Ficus microcarpa</i> L.f	Moraceae	Pittamarri	Stem bark	Stomach pain	Stem bark paste along with half cup of water is administered twice a day for 2 days
	<i>Ficus racemosa</i> L	Moraceae	Medi Chettu	Stem bark	fig Dysentery	Stem bark paste mixed with half cup of water is administered twice a day for 3 days
					Cuts and wounds	Stem bark paste is applied on the affected parts
	<i>Ficus religiosa</i> L	Moraceae	Ravi chettu	Stem bark	Leucorrhoea	Stem bark paste, bark pastes of <i>Pterocarpus marsupium</i> and <i>Oroxylum indicum</i> mixed with root paste of <i>Mirabilis jalapa</i> are administered with half cup of water daily twice for 2 days
	<i>Ficus tinctoria</i> Forst. f. subsp. <i>parasitica</i> (Willd.)	Moraceae	Tella barnika	Stem bark	Dysentery	Stem bark paste mixed with half cup of water is administered twice a day for 3 days
	<i>Gardenia latifolia</i> Ait. Rubiaceae	Rubiaceae	Korukod	Stem bark	Cuts	Stem bark paste is applied on affected parts
					Dysentery	Stem bark paste along with half cup of water is administered twice a day for 2 days
					Sorcery	Stem bark paste mixed with half cup of water is administered orally twice for one day only
	<i>Glycosmis pentaphylla</i> (Retz.) DC	Rutaceae	Konda gilugu	Stem bark	Leucorrhoea	Stem bark paste along with that of <i>Oroxylum indicum</i> is administered with half cup of water twice a day for 3 days.

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					Piles	Stem bark paste mixed with half cup of water is administered daily once for 3 days
	Grewia tiliifolia Vahl	Tiliaceae	Nela syamanth	Stem bark	Cuts	Stem bark paste is applied on the affected parts
	Holarrhena pubescens (Roxb. ex Fleming) Wall	Apocynaceae	Kodicipala	Stem bark	Dysentery	Stem bark paste mixed with half cup of water is administered twice a day for 2 days
	Homalium nepalense (Wall.) Benth	Flacourtiaceae	Chedu chettu	Stem bark	Puerperal fever	Stem bark paste made into tablets of 10 gm each is administered thrice for one day only
	Kydia calycina Roxb	Malvaceae	Pothada chettu	Stem bark	Heart pain	Stem bark paste along with that of <i>Erythrina variegata</i> is ground and administered with water twice a day till cure
	Lansea coromandelica (Houtt.) Merr	Anacardiaceae	Gumpena	Stem bark	Bone fracture	Stem bark paste along with that of <i>Listea deccanensis</i> is plastered on the fractured area. The bandage is changed for every 2 days.
	Mimusops elengi L.	Sapotaceae	Pogada	Stem bark	Dysentery	Stem bark paste mixed with half cup of water is administered twice a day till cure.
	Oroxylum indicum (L.) Vent	Bignoniaceae	Pumpena	Stem bark	Easy delivery	Stem bark paste mixed with half cup of hot water is given at the time of delivery
					Jaundice	Stem bark paste and root pastes of <i>Cassia occidentalis</i> and <i>Rhinacanthus nasutus</i> are administered with curd twice a day till cure
					Leucorrhoea	Flowers and stem bark are ground and made into tablets of 50 g each and administered one tab daily twice till cure.
	Phyllanthus emblica L.	Euphorbiaceae	Usiri chettu	Stem bark	Dysentery	Stem bark along with that of <i>Terminalia chebula</i> is boiled in one litre of water until it is reduced to one or three spoons of decoction. One spoon of this decoction is taken twice a day till cure
	Plumeria alba L.	Apocynaceae	Lakshmi poolu	Stem bark	Anti-emetic	Stem bark paste mixed with root paste of <i>Argemone mexicana</i> is administered with half cup of water daily twice till cure
	Plumeria rubra L.	Apocynaceae	Yerra champangi	Stem bark	Stomach pain	Stem bark mixed with that of neem is administered with half cup of water twice a day for 2 days
	Pongamia pinnata (L.) Pierre	Fabaceae	Ganuga	Stem bark	Contraceptive	Stem bark along with that of <i>Cipadessa baccifera</i> and a pinch of salt are ground and administered with three spoons of water thrice a day
	Pterocarpus marsupium Roxb	Fabaceae	Yegisa	Stem bark	Dysentery	Stem bark paste mixed with Punica granatum tender leaf paste is administered with half cup of water twice a day.
	Randia spinosa (Retz.) Poir	Rubiaceae	Mangachettu	Stem bark	Abortion	Stem bark paste mixed with half cup of water is administered only once to abort pregnancy up to 3 months
	Schefflera stellata (Gaertn.) Harms	Araliaceae	Purugodi	stem bark	Uses	If the young bride becomes lean after intercourse, she will be administered with stem bark soaked in half glass of water twice for one day only. If this is done, she will become normal.
	Sesbania grandiflora (L.) Poir		Tella sumintha	stem bark	Dysentery	Stem bark paste is administered along with half cup of hot water twice a day till cure.
	Solanum erianthum D. Don	Solanaceae	Pitta chettu	stem bark	Anti-emetic	Stem bark paste mixed with half cup of water is administered thrice a day for 2 days
	Solanum torvum Sw	Solanaceae	Kondusti	Stem bark	Fits	Stem bark ground with that of <i>Jatropha curcas</i> , roots of <i>Calotropis procera</i> , <i>Boerhavia diffusa</i> , <i>Solanum</i>

						<i>nigrum and Teprosia purpurea</i> are administered with half cup of water twice a day till cure
	<i>Sterculia urens</i> Roxb	Sterculiaceae	Kovila chettu	Stem bark	Amoebic dysentery	Gum along with stem bark paste of <i>Bombax ceiba</i> mixed with curry of ladies finger is eaten thrice a day for 2 days
	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Neredu	Stem bark	Ulcers in stomach	Ulcers in stomach: Stem bark along with that of <i>Mangifera indica</i> , <i>Terminalia alata</i> and <i>Moringa oleifera</i> are ground and mixed with half cup of water is administered twice a day for 3 days.
	<i>Terminalia alata</i> Roth	Combretaceae	Nallamaddi	Stem bark	Malaria	Twenty g of stem bark mixed with 100 ml of water is given in small doses thrice a day for 3 days
	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn	Combretaceae	Tellamadhi	Stem bark	Boils and blisters	Stem bark paste is applied all over the body and 50 mg of bark paste is given orally once a day till cure
	<i>Woodfordia fruticosa</i> (L.) Kurz	Lythraceae	Arepuvvu	Stem bark	Jaundice	Stem bark paste mixed with tuberous paste of <i>Rauwolfia serpentina</i> is administered with half cup of water twice a day for 2 days.
	<i>Wrightia tinctoria</i> (Roxb.) R. Br	Apocynaceae	Ankudu	stem bark	Headache:	Leaf and stem bark are ground and applied on the forehead. A spoonful of paste is administered orally.
	<i>Zanthoxylum armatum</i> DC	Rutaceae	Konda kasivinda	Stem bark	Scabies	Stem bark paste is applied on affected parts.

### III. Results And Discussion:

The present study yielded 56 species covering 45 genera and 31 families used by the Primitive Tribal Groups of Adilabad district to cure human ailments and in their in daily use. The common ailments cure by them are abdominal pain, abortion, allergy, amoebic dysentery, anti-emetic, antidote to poison, arthritis, asthma, back pain, boils, blisters, blood dysentery, body pains, bone fracture, burning sensation, chicken pox, contraceptive, cough, cuts, diabetes, dysentery, easy delivery, fever, fits, galactagogue, headache, heart pain, heel cracks, helminthiasis, jaundice, leucorrhoea, malaria, menorrhagia, mental disorders, muscular pain, neurological weakness, phlem, piles, puerperal fever, rib muscle pain, sprains, scabies, sciatica, sorcery, stomach pain, swelling of eyes, toothache, tonsils, tumours, tuberculosis, ulcers, weakness, witchcraft, wounds, ward off evil spirits and witch craft with a total of 83 practices. *Aganosma caryophyllata*, *Diospyros melanoxylon* and *Homalium nepalense* and 70 practices were found to be new (Jain 1991 and Kirtikar and Basu 2003). Of the 31 families Apocynaceae was found to be dominant with 7 species followed by Fabaceae (6), Moraceae (5), Rutaceae and Euphorbiaceae (3 each) and others with 1-2 species. Of the 56 species of the present study, 17 were common with those reported earlier in North-east India and the families Fabaceae, Moraceae and Euphorbiaceae were dominant in both the areas (Islam, 2000). Thus, bark plays an important role in day-to-day life of the primitive tribal groups of the region in curing various ailments and for other purposes.

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# Ethnobotanical survey of medicinal plants used by Risod Taluka, Washim District. (MS)

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## ABSTRACT

Ethnobotany is the study of a region's plants and their practical uses through the traditional knowledge of a local culture and people investigating plants used by societies in various parts of the world. It involves the indigenous knowledge of plant classification, cultivation, and use as food, medicine and shelter. Although most of the early ethnobotanists studied plant used in cultures other than their own, the term ethnobotany does not necessarily mean the study of how other people use plants. It is also not restricted to the study of medicinal plants by indigenous cultures. India has a rich tradition of plant-based knowledge on healthcare. A large number of plants/plant extracts/decoctions or pastes are equally used by tribal and folklore traditions in India for treatment of cuts, wounds, and burns. The present review thus attempts to analyze the ethnobotanical knowledge base for treatment of cuts and wounds which includes a usage of plants, methods employed by tribal and folklore practices prevailing in India.

**Key words:** Ethnobotany, Medicinal plants, Traditional knowledge, Indigenous culture.

## INTRODUCTION:

For thousands of years, medicinal plants have played an important role throughout the world in treating and preventing a variety of diseases. The present study was initiated with an aim to identify traditional healers who are practicing herbal medicine (Jain 1995). This includes all land classified as forest under any legal enactment dealing with forest or administered as forest, whether state owned or private and whether wooded or simply maintained as forest land. Within the forest area itself, there may be occasionally cultivated patches or grazing lands, but such area is shown under column 104 of the Village Directory as forest (Ayyanar et.al 2005). Therefore, the information based on records is in some cases at least, likely to be different when

compared with the actual field situation. The Washim Plateau spreads over Washim, Risod, Malegaon, Mangrulpir and Manora Tahsils. The area is a rolling upland country with an elevation of between 550 and 600 meters. This area gently slopes towards southeast and is relatively plain in nature. On the plateau the soils are shallow with murum substratum which vary considerably both in nature and depth. This plateau grows Kharif crops and specially the pulses. Wheat and other rabi crops are also grown. The Bembla Basin lies in the north-eastern part of the District in Karanja Tahsil. This area has the characteristics of the „Payanghat“ plain of Akola District. It slopes towards west and has an elevation varying between 350 and 400 meters. It is even in surface and has rich fertile soil known as black cotton soil. In which Cotton and Jowar are grown in abundance. Physiographic ally Washim District forms a part of Tapi – Purna valley, the micro level division of the Deccan Plateau. On the basis of relief, the district may be divided into four parts viz. 1) Ajanta Hills, 2) Paladi Hills, 3) Washim Plateau and 4) Bembla Basin. India has about 45,000 plant species; medicinal properties have been assigned to several thousand. About 2000 figure frequently in the literature; indigenous systems commonly employ 500. Despite early (4500-1500 BC) origins and a long history of usage, in the last two centuries Ayurveda has received little official support and hence less attention from good medical practitioners and researchers (Kumar et.al 2007).

#### **MATERIAL AND METHODS:**

Field study was carried out over a period of 6 years in Risod Taluka, District Washim. The ethnomedicinal information was collected through interviews among the traditional healers.

#### **RESULT AND DISCUSSION:**

The present study includes the survey of nearly all villages in surroundings of Risod Taluka during the year (May 2015 – May 2020). Several villages of the target area have been visited to find out resource persons, herbal practitioners and village heads. After establishing a better rapport with the villagers, herbal practitioners' information was gathered and documented. It revealed valuable information about the ethno medicine of the local people of this Dist. It is invaluable and having immense potential for the primary health care of the people in this area. The present study elicits the importance of local herbal practices and availability of medicinal plants in the area, which will help in self-sufficiency for their primary health care practices.

Prostrate herbs with perennial root stock; stems creeping with long stolons, rooting at nodes. Leaves simple in rosettes, orbicular reniform, crenate-dentate, rotund. Flowers purplish, in simple umbels. Sepals 5, triangular. Petals 5. Stamens 5. Ovary bilocular; ovule 1 per locule, pendulous; stylopodium depressed. Mericarps laterally flattened, vittae obscure.

**Fl. & Frt.** – September - February.

**Uses** – Root - Dandruff. Whole plant- memory booster, polyuria, fever, epilepsy, rejuvenator.

37. *Ixora coccinia* L.

Family - Rubiaceae

Vernacular name - Jungle Geranium.

**Morphology -**

Shrubs. Leaves elliptic-ovate, oblong, and coriaceous. Flowers deep red, in corymbs. Calyx truncate, 4 toothed. Corolla salver form, lobes 4, twisted to left. Stamens 4; anthers acuminate. Ovary bilocular; ovule 1 per locule, on peltate placentae. Berries globose.

**Fl. & Frt.** - Throughout the year.

**Uses** – Root - sedative, diarrhoea, dysentery, stomachic, leucorrhoea. Flowers-ulcers, venereal diseases.

38. *Lactuca runcinata* DC.

Family - Asteraceae

Vernacular name -

**Morphology -**

Erect, glabrescent herbs. Leaves usually radical, oblong, dissected, spinulose. Heads yellow, homogamous, disciform, ligulate, in terminal branches. Pappus seriate, minutely sentose. Corolla tubular, 5-toothed. Stamens 5, subexserted, anthers ditheous, syngeneous. Ovary obovoid, unilocular; ovule one, basal; style 2-fid; stigma recurved. Achenes black, fusiform.

**Fl. & Frt.** – July - March.

**Uses** - Leaf - Branchites, asthma, diuretic, tonic, liver disorders.

39. *Plumbago zeylanica* L.

Family - Plumbaginaceae

Vernacular name - Lead wart - white flower.

**Morphology -**

Erect, subshrub or diffuse undershrubs. Leaves elliptic-ovate, entire, acute, base truncate, glabrous. Flowers white, in terminal, simple, panicle spikes. Calyx tube fully covered with stalked glands. Corolla tubular, long, slender, lobes 5, imbricate. Stamens 5, free; anther oblong, dorsifixed. Ovary 5-gonous, unilocular; ovule one, basal; stigma 5-forked. Capsules oblong, grooved, glandular; seeds solitary, dark brown, cylindrical, flat.

**Fl. & Frt.** – November-April.

**Uses** – Root - Abortifacient, skin diseases, rheumatism, dyspepsia, anaesthesia, sudorific, digestive, piles, diarrhoea, dysentery, ring worm. Leaf - scabies, ulcers, psoriasis.

40. *Cascabela thevetia* (L.) Lipp.

Family - Apocynaceae

Vernacular name - yellow oleander.

**Morphology -**

Densely leafy, evergreen, shrubs or small trees. Leaves alternate, sessile, linear, margin revolute, tapering at both ends, dark green and shining above, 1-nerved and pinnately veined. Flowers large, yellow, in terminal peduncled cymes. Calyx with many glands inside at base. Corolla funnel form with cylindrical tube and campanulate limb with 5 hairy scales at throat. Stamens 5, borne at throat with the scales. Ovary bicarpellary, bilocular; ovules 2 per locule, marginal; style filiform with 2 lobed stigma. Drupes compressed - triangular, fleshy, red, turning black.

**Fl. & Frt.** – Most part of the year.

**Uses** - Leaf and Stem - cancer. Fruit - poisonous.

41. *Catharanthus roseus* (L.) G. Don.

Family - Apocynaceae

Vernacular name - Red periwinkle.

**Morphology -**

Perennial herbs or undershrubs. Leaves elliptic-obovate to oblong, entire, obtuse, apiculate, base cuneate or acute, glabrous to puberulous, lateral nerves 10-12 pairs. Flowers rose or white, solitary or paired in the axils. Sepals 5, subequal, acuminate. Petals 5, united, tubular, ovate-triangular, apiculate. Stamens 5, epipetalous.

Ovary bicarpellary subapocarpus, bilocular; ovules numerous per locule, marginal. Follicle's pubescent; seeds black.

**Fl. & Frt.** - Throughout the year.

**Uses** - Root - Insomnia, cancer, diabetes, stomachic, menorrhagia, blood pressure, cardio tonic, and tranquiliser, sedative. Leaf-menorrhagia, wasp stings, dysmenorrhoea, diabetes.

42. *Plumeria alba* L.

Family - Apocynaceae

Vernacular name - Temple tree.

Morphology -

Trees; latex milky. Leaves alternate, linear-oblong to oblong-lanceolate, margins revolute, long acuminate, densely white-pubescent below, without definite marginal vein, lateral nerves parallel. Flowers white with yellow centre, fragrant, in terminal paniced cymes. Calyx small, 5-parted, glandular at tips. Corolla funnel-form, lobes obovate, as long as or longer than tube. Ovary half inferior. Follicles leathery; seeds winged at base.

**Fl. & Frt.** - April - July.

**Uses** - Root - Cathartic. Bark-purgative, emmenagogue, stimulant, venereal diseases, antiherpatic.

43. *Rauwolfia serpentina* (L.) Benth.

Family - Apocynaceae

Vernacular name - Serpentine.

**Morphology** -

Shrubs. Leaves in whorls of 3, thin, broadly oblanceolate, undulate, acute, acuminate, base attenuate, lateral nerves 8-12 pairs, and main nerves rather distant, oblique. Flowers white, in axillary corymbs; pedicels red. Calyx 5-lobed, lobes short. Corolla tube long and slender, narrow, dilated a little above the middle, lobes 5. Stamens 5. Drupes purplish - black, connate except at top; seed 1, ovoid.

**Fl. & Frt.** - August - February

**Uses** - **Root** - Nervous disorders, diabetes, hypertension, tranquilizer, psychosis, insomnia, labour pains, poisonous bites, intestinal problems, pains, anorexia, epilepsy, anthelmintic.

44. *Wrightia tinctoria* (Roxb.) R. Br.

Family - Apocynaceae

Vernacular name - Irovy wood.

Morphology -

Densely foliaceous, deciduous trees; branchlets glabrous. Leaves elliptic-oblong or oblong - lanceolate, entire, and acuminate, basetruncate, glabrous, sparsely pubescent below, secondary nerves 8-9 pairs. Flowers white, fragrant, in trichotomously branched terminal cymes. Calyx lobes 5, ovate, acute. Corolla lobes 5, oblong, puberulous within, acute, corona scales 2-3 series, filiform, fimbriate. Stamens 5; anthers tip bearded. Ovary bicarpellary subapocarpus, bilocular, ovules numerous per locule, intruded marginal placentation. Follicles cylindrical, mericarps attached at the end, curved; seeds linear - oblong, beaked.

**Fl. & Frt.** - October-June.

**Uses** - Bark - Biliary problems, diabetes, flatulence, skin disorders, psoriasis. Latex - mouth ulcers, cough, cold, fevers. Seed-anthelmintic, aphrodisiac

45. *Calatropis gigantea* (L.) R. Br.

Family - Asclepiadaceae

Vernacular name - Madar.

**Morphology -**

Erect shrubs; branchlets white - tomentose; latex milky. Leaves subsessile, decussate, obovate - elliptic, entire, acute, base auriculate, white - tomentose beneath. Flowers white, in terminal umbellate cymes. Calyx lobes 5, ovate, valvate, ciliate, glandular. Corolla lobes 5, white, ovate, spreading, valvate. Pollinia pendulous, pollinial bags oblong, flattened, corona single, stamina laterally compressed, usually incurved, horny and 3-fid at apex, pubescent at back. Follicles in pairs, oblong, white, pubescent; seeds oblong to ovate, coma long, silky.

**Fl. & Frt. -** Throughout the year

**Uses -** Root - Poisonous bites, swollen joints, skin diseases, abdominal disorders. Milky latex - antiseptic. Leaf-antiperiodic. Flower-stomachic, diabetes, digestive diseases, asthma, catarrh. Latex - syphitis, cutaneous affections, leprosy.

**CONCLUSION:**

The people practice and cure almost all ailments or diseases or wounds very effectively with simple locally available plants without involving much financial commitment, in majority of the cases they treat freely. As a result of the present study, we can recommend the plants *Cleome viscosa* L., *Muntingia calabura* L. *Abrus precatorius* L. *Cascabela thevitia* (L.) Lipp. *Cordia dichotoma* Willd, *Wrightia tinctoria* (Roxb.) for further ethno-pharmacological studies for the discovery of potential new drugs.

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