



## **Folk Medicinal Plants Used In The Treatment Of Asthma In Polavaram Forest Area, West Godavari District, A. P., India**

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*Asthma is a chronic inflammatory disease of the airways projected as a serious public health problem with over 300 million sufferers worldwide and creates a burden in health care costs, lost productivity and reduced participation in family life.. Herbal preparations have been cited as the third most popular complementary treatment modality by asthma sufferers. The study carried out during October 2011 to August 2012 covered both rural and forest areas of Polavaram. 37 plant species belonging to 35 genera and 30 families were used as folk medicine for asthma. Of these 37 species, 33 are dicots, 4 (*Cynodon dactylon*, *Curculigo orchioides*, *Zingiber capitatum* and *Zingiber officinale*) are monocots respectively. 31 are monotypic, viz., representing only by one species. The remaining families Acanthaceae, Asclepiadaceae, Combretaceae, Cucurbitaceae and Zinziberaceae representing 2 species each and Asteraceae 3 species respectively. The utilization pattern of the species indicated that roots of 5, rhizome of 3, root tuber of 1, stem of 2, leaves of 12, wood & bark of 1, whole plant of 4, stem & leaves of 1, fruits of 3, bark of 2 and aerial parts of 1. Phytochemical studies of above said plants need to be taken up to find out the exact ingredients that help in the asthma.*

**Key words:** Folk Medicinal plants, Treatment, Asthma, Polavaram forest area, West Godavari

### **INTRODUCTION**

Plants have traditionally been used as a source of medicine in India since long time ago to control various ailments afflicting humans and their livestock. The traditional medicine like Chinese, Ayurvedic, Unani and Biomedicine are very effective particularly in rural areas for the treatment of various ailments. In spite of the advent of the modern medicines, tribal populations are still practicing the art of herbal medicine. Reports of Anonymous (1994) Akerele (1992) revealed that more than 80% of the world populations rely on herbal and traditional medicine. It was estimated that plant species of 2, 500 have been utilized for medicinal purposes and more than 6000 plants are widely used in folk and herbal medicine, Huxley (1984). Traditional knowledge forms the basis for innovations of novel drugs for the benefit of the humanity. Traditional remedies together with folklore system based mainly on phytotherapy. The knowledge of the use of medicinal plants and their properties was transmitted from generation to generation. India has about 45 000

plant species and among them several thousand are claimed to possess medicinal properties. Researchers conducted in the last few decades on the plants mentioned in ancient literature or used traditionally for asthma have shown antiasthmatic, antihistaminic and antiallergic activity.

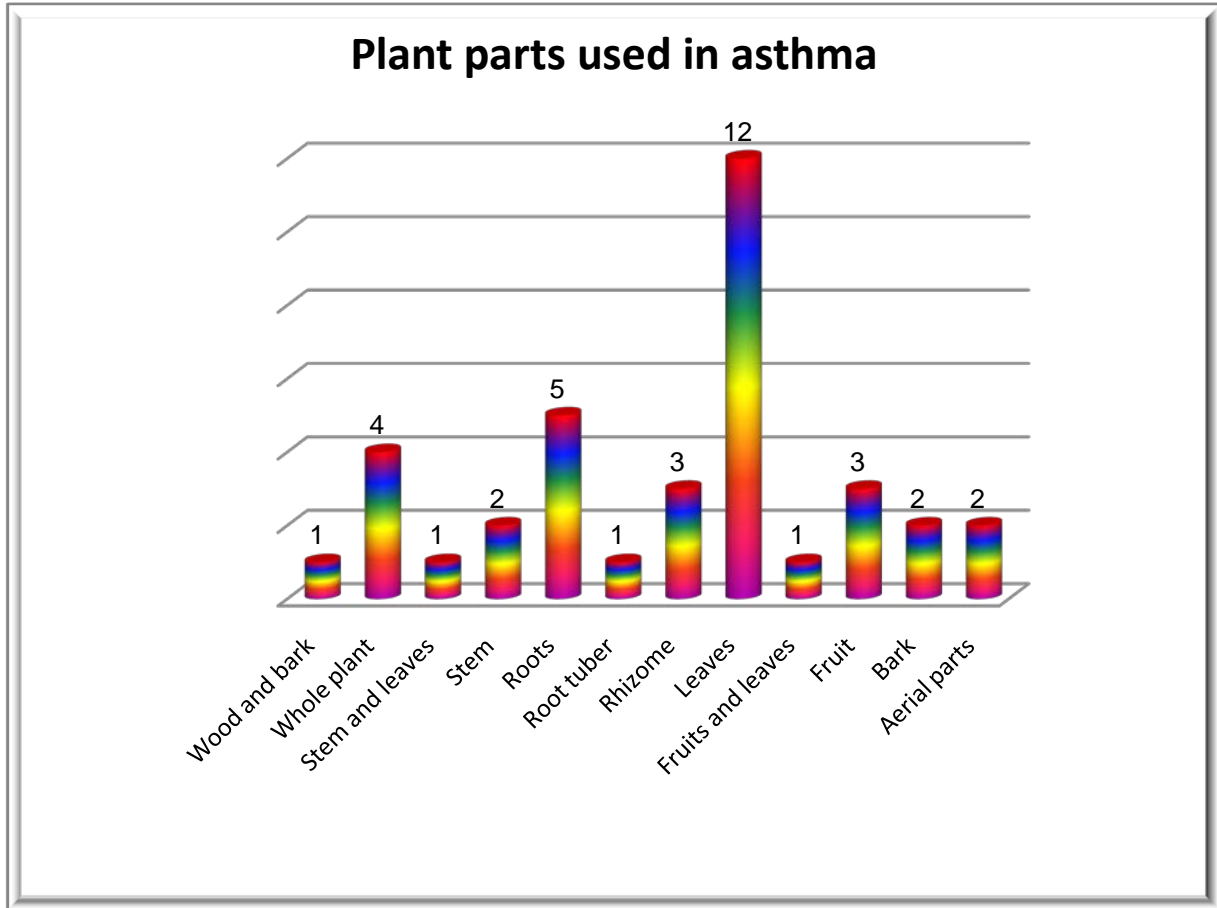
Polavaram is a village and mandal in West Godavari district of Andhra Pradesh, India. It is about 35 km away from the banks of Godavari River at Papi Hills of Eastern Ghats. It consists of 23 villages, 4 in plain area and 19 in scheduled area. The Geddapallipanchayat & its villages are in deep forest, which is 20 km away from plains. It is located at 17°15'00"N 81°38'00"E 17.2500°N 81.6333°E. It has an average elevation of 16 metres (55 ft). Life style is completely rural. Polavaram is predominantly a tribal area, and it is dominated by Konda Reddy and Koya tribes. The main crops are rice, Corn, sugarcane, groundnut, finger millet, sesamum, jowar, bajra and mesta etc. Teak, Rosewood etc. are major forest products. Polavaram region of west Godavari harbours diversified flora and tribal culture. Although studies have been taken up for documentation of flora in this region, there was no sufficient attempts on applications of Asthma (Asthma is the common chronic inflammatory disease of the airways characterized by variable and recurring symptoms, reversible airflow obstruction and bronchospasm) from various plant species as medicinal remedy. In order to record the medicinal knowledge, uses of medicinal plants in the region, the survey was under taken.

## MATERIAL AND METHODS

The study carried out during October 2011 to August 2012 covered both rural and forest areas of Polavaram. The data was recorded following the standard procedures (Jain 1981, 1987, and 1989); Chadwick and Mars (1994) and Martin (1995). The main emphasis was given to intensive field work in selected tribal pockets and rural area. The survey aimed to interact with maximum number of traditional communities, particularly the tribes and native doctors (Natu vaidyulu). Several field trips were organized to administer questionnaires and interviews to traditional healers. The questions were designed to obtain information on their knowledge of asthma. Discussions were made at times with local chiefs, priests and herbal doctors not only for gathering information but also for confirmation of the uses of same plant recorded from different informants at different places. Along with information, the vernacular names of the plants have been collected, which are almost same with little variations in pronunciation from tribe to tribe. These plants were identified with the help of 'Flora of Presidency of Madras' by Gamble (1915-1936); Flora of British India' by Hooker (1872-1897); 'Forest flora of Andhra Pradesh' by Reddy *et al.* (1991); 'Flora of Andhra Pradesh' by Pullaiah & Chennaiah (1997).

## RESULTS AND DISCUSSION

In the present study a list of 37 plant species belonging to 35 genera and 30 families were used as folk medicine for asthma. Of these 37 species, 33 are dicots, 4 (*Cynodon dactylon*, *Curculigo orchoides*, *Zingiber capitatum* and *Zingiber officinale*) are monocots respectively. 31 are monotypic, viz., representing only by one species. The remaining families Acanthaceae, Asclepiadaceae, Combretaceae, Cucurbitaceae and Zinziberaceae representing 2 species each and Asteraceae 3 species respectively. List of plant species are used for asthma are given alphabetically, name of the plant species, family, local name, part used (Table-1). It is revealed that the aerial parts *Aerva lanta* and *Euphorbia hirta* the bark of *Dendrophthoe falcate* and *Ficus benghalensis*; fruits of *Terminalia bellerica*, *Terminalia chebula* and *Zanthoxylum rhetsa*; fruit and leaves of *Momordica dioica*, leaves of *Adathoda vasica*, *Ageratum conyzoides*, *Azima tetraantha*, *Asystasia gangetica*, *Biophytum nervifolium*, *Cassia absus*, *Clematis smilacifolia*, *Eclipta alba*, *Ocimum tenuiflorum*, *Piper betel*, *Sphaeranthus indicus* and *Tylophora indica*; rhizomes of *Curculigo orchoides*, *Zingiber capitatum* and *Zingiber officinale*; root tuber of *Coccinia grandis*; the root parts of *Aristolochia indica*, *Balanitis aegyptica*, *Clerodendrum serratum*, *Hemidesmus indicus* and *Rauwolfia serpentine*; stems of *Argemone mexicana* and *Cissus quadrangularis*; stem and leaves of *Nyctanthus arbortristis*; wood and bark of *Casuarina equisetifolia* and whole plants like *Bacopa monnieri*, *Cynodon dactylon*, *Hypericum japonicum* and *Portulaca quadrifida* are used. (Table-I). The utilization pattern of the species indicated that roots of 5, rhizome of 3, root tuber of 1, stem of 2, leaves of 12, wood & bark of 1, whole plant of 4, stem & leaves of 1, fruits of 3, bark of 2 and aerial parts of 1 were used are presented in Fig. 1. Despite various papers that have been conducted on the medicinal plants of South India (Viswanathan, 1973; Savithramma et al 1998 Prayaga Murty and Narasimha Rao 2010, Prayaga Murty and Venkaiah 2010), the medicinal use of plants of Andhra Pradesh to treat asthma had been examined in various parts of Andhra Pradesh except Polavaram forest region. Some species mentioned by tribal healers for the treatment of asthma are known to be used in the preparation of popular Ayurvedic medicines in clinical settings and data are available for some species (Satyavathi et al., 1987). Among such plants are *Adhatoda vasica*, *Terminalia chebula* and *Clerodendrum serratum*. *Adhatoda vasica* is extensively used by Natuvaidyulu as well as by Ayurvedic physicians due to its bronchodilatory activity, either singly (Shah et al., 1987) or in combinations (Vedavathy et al., 1997)

**Fig.-1 Plant parts used in treatment of asthma****Table-1: The Plants used for the treatment of Asthma**

S.No	Name of the species	Family	Local name	Part used
1.	<i>Adathoda vasica</i>	Acanthaceae	Addasaram	Leaves
2.	<i>Aerva lanta</i> Linn	Amarantaceae	Kondapindi kura	Aerial parts
3.	<i>Ageratum conyzoides</i> L	Asteraceae	Visamustih	Leaves
4.	<i>Argemone mexicana</i>	Papaveraceae	Balu rakkasi	Stem
5.	<i>Aristolochia indica</i> L.	Aristolochiaceae	Nalla eswari	Root
6.	<i>Azima tetracantha</i> Lam	Salvadoraceae	Tella uppi	Leaves
7.	<i>Asystasia gangetica</i>	Acanthaceae	Tellamokka	Leaves
8.	<i>Bacopa monnieri</i> Wettst.	Scrophulariaceae	Brahmi	Whole Plant
9.	<i>Balanitis aegyptica</i> (L.) Delile.	Balanitaceae	Gara	Root
10.	<i>Biophytum nervifolium</i> Thw.	Oxalidaceae	Jalapuspa	Leaves
11.	<i>Cassia absus</i> L	Caesalpiniaceae	Chanupala vittulu	Leaves
12.	<i>Casuarina equisetifolia</i> Linn	Casuarinaceae	Sarugudu	Wood, Bark
13.	<i>Cissus quadrangularis</i> L.	Vitaceae	Nalleru	Stem

14.	<i>Clematis smilacifolia</i> Wall.	Ranunculaceae	Pedutivva	Leaves
15.	<i>Clerodendrum serratum</i> Linn	Verbenaceae	Gunta Barangi	Roots
16.	<i>Coccinia grandis</i> (L.) Voigt.	Cucurbitaceae	Kakidonda	Root tubers
17.	<i>Curculigo orchioides</i> Gaertn	Amaryllidaceae	Nelathadi	Rhizomes
18.	<i>Cynodon dactylon</i>	Poaceae	Garika	Whole plant
19.	<i>Dendrophthoe falcata</i> (L. f.)	Loranthaceae	Bajinika	Bark
20.	<i>Eclipta alba</i> Linn	Asteraceae	Guntakalagara	Leaves
21.	<i>Euphorbia hirta</i>	Euphorbiaceae	Reddyvari nanubralu	Aerial parts
22.	<i>Ficus bengalensis</i> Linn	Moraceae	Marri	Bark
23.	<i>Hemidesmus indicus</i> R. Br.	Asclepiadaceae	Sugandapala	Roots
24.	<i>Hypericum japonicum</i> Thun.	Hypericaceae		Plant
25.	<i>Momordica dioica</i>	Cucurbitaceae	Angakara	Fruits & leaves
26.	<i>Nyctanthes arbortristis</i>	Nyctaginaceae	Parijatham	Stem & leaves
27.	<i>Ocimum tenuiflorum</i> Linn	Lamiaceae	Tulasi	Leaves
28.	<i>Piper betel</i> Linn	Piperaceae	Tamalapaku	Leaves
29.	<i>Portulaca quadrifida</i> L	Portulacaceae	Sannapappukura	Plant
30.	<i>Rauwolfia serpentina</i> (L.) Benth.ex	Apocynaceae	Sarpagandi	Root
31.	<i>Sphaeranthus indicus</i> Kurz	Asteraceae	Bodasaram	Leaves
32.	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Combretaceae	Tani	Fruit
33.	<i>Terminalia chebula</i> Retz.	Combretaceae	Karaka	Fruit
34.	<i>Tylophora indica</i> (Burm. f.) MeIT.	Asclepiadaceae	Verripala	Leaves
35.	<i>Zanthoxylum rhetsa</i> (Roxb.) DC.	Rutaceae	Rhetsa	Fruit
36.	<i>Zingiber capitatum</i> Roxb	Zinziberaceae	Allam	Rhizome
37.	<i>Zingiber officinale</i> Thw	Zinziberaceae	Bomma kachikai	Rhizome

## CONCLUSION

Folk medicinal plants survey of the area reveals that the people possess good knowledge of herbal drugs but as they are in progressive exposure to the modernization, their knowledge on traditional uses of plants may be lost in due course. So it is an important to study and document the knowledge on plants used by different ethnic people for the benefit of future generations. This type of studies may also provide valuable information to biochemists and pharmacologists in screening of individual species and their phyto-constituents to accelerate the drug discovery and development process for the treatment of asthma.

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