*Indian Journal of Fundamental and Applied Life Sciences ISSN: 2231-6345 (Online)*
*An Online International Journal Available at http://www.cibtech.org/jls.htm*
*2013 Vol. 3 (1) January-March, pp.198-202/Devi et al.*
***Research Article***

# ETHNO MEDICO BOTANICAL STUDIES OF HIGH VALUED MEDICINAL PLANTS OF TIRUMALA HILLS

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## ABSTRACT
The purpose of the present study on high valued medicinal plants of Tirumala hills has been taken up to collect the information about medicinal plants highly recommended and used by ethnic healers and enrich enthomedicobotanical data to provide a new or an additional information regarding the tribal and folklore medicine and to assess the safety and efficacy of these new crude drugs and their potentialities. This investigation is to strictly register their medicinal properties from more reliable tribes (Yanadi, Nakkala, Irula) and other folklore like village physicians of long standing heritage, house-wives, mid-wives, native doctors, age old persons, sadhu's and other dwellers who are having high degree of knowledge in herbal medicine. Out of these, some important and widely used plants by trials and other folklore healers for certain specific ailments or disorders were selected for the study to analyze their detailed phytochemical investigations and to build up a logical scientific basis for tribal and folklore claims of these miraculous high valued medicinal plants of Tirumala hills. The objective of this study was to establish a regional profile of the indigenous knowledge system (IKS) for medicinal plant use and cultural practices associated with the healing process of these plants by traditional healers.

***Key Words***: *High Valued Medicinal Plants, Tirumala Hills, Ethno Botanicals*

## INTRODUCTION
Ethnobotanical studies are proving to be powerful tools in the search for new drugs. However, despite being scientifically recognized claimed approaches, it is necessary to recognize that the relationship among people, their traditions, and the use of natural resources for medical purposes can be quite complex (Ulysses Paulino de Albuquerque, 2010). The World Health Organization (WHO) defines a medicinal plant as "any plant, which in one or more of its organs, contains substances that can be used for therapeutic purposes, or which are precursors for chemo pharmaceutical semi synthesis". This definition distinguishes those plants that are already scientifically tested from those not subjected to a scientific study but are used in the traditional systems of medicine. Rawal *et al.,* (2009), reported that based on plant species having more active biochemical compounds which are curing numerous diseases, possesses commercial and economic value as high valued medicinal plants. Based on plants which with multitude of medicinal values having applications for the development of pharmaceutical industries, commercialization and possesses agro-industrial potentialities is considered as high valued medicinal plants (Hassan Sher, 2010). Ankita kataky and Handique (2010) stated that the high valued medicinal plants are those with wide biological activities, higher safety of margin than the synthetic drugs, lesser cost and pharmaceutical application or food supplements or food preservation in order to promote growth of the live stock and to increase the nutritional value of different foods and diet.
The major ethnic communities of the study area (i.e. Tirumala hills and its boundary areas) are Yanadi (Y), Nakkala (N) and Irula (I) and Folklore (F) of some village communities. Though a little work on medicinal plants (Hemadri, 1987 a, b; Nagaraju and Rao , 1990 and Sudhakar and Madhava Chetty, 1998) has been reported, they are insufficient in many aspects due to the addition of new information continuously. Also, ethonobotanically the surveyed area has not been adequately codified and no comprehensive account on Yanadi, Nakkala and Irula folklore survey are available on the use of medicinal plants. Hence, the author has focused mainly on the above tribes because their traditional system of medicine is almost deriving the drugs from plant sources.

## MATERIALS AND METHODS

### *Ethno Medico Botanical Survey of the Study Area*

The study area Tirumala hills are the continuation of the Seshachalam hills of Chittoor and Kadapa (YSR) districts of Rayalaseema. Seshachalam hills are part of Southern Eastern Ghats of Andhra Pradesh. The total area of Tirumala hills is about 180.81 sq. km. Intensive ethnobotanical survey was conducted in Tirumala hills and its boundary areas. Numerous tribal hamlets and villagers were surveyed during the period of our survey.

### *Field Work*

The ethnobotanical field survey was conducted according to the methods adopted by Schultes (1962), Shah and Joshi (1971), Jain (1981) and Shah (1987).

Indepth interviews were conducted with the tribal physicians Yanadi (Y), Nakkala (N) and Irula (I) and other Folklore (F). Specific and detailed questions were asked for recording the field data.

Collection of medicinal plants was made in different places in different seasons, covering almost all the important vegetational areas in and around of Tirumala hills.

### *Herbarium Preparation*

All the collected plant specimens were poisoned, pressed, dried and stiched on standard herbarium sheets of 28 x 42 cm according to the methodology described by Jain and Rao (1977).

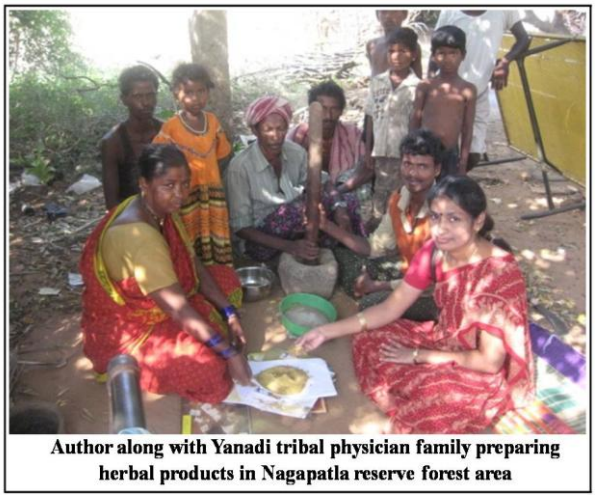
### *Identification of Plant Specimens*

The plant specimens were identified and citation is given with the help of the floras of Gamble (1957), Naidu and Rao (1967, 1969), Naidu *et al.*, (1971), Rangacharyulu (1991) and Thammanna *et al.*, (1994).

## RESULTS

In this Ethnobotanical studies we have enumerated 18 High valued medicinal plants used by different ethnic tribes inhabiting in and around tirumala hills of Seshachalam forests,eastern ghats ,andhra pradesh. The indigenous peoples of the selected sites have traditional healers around acquired knowledge through oral tradition and empirical means and compiled detailed knowledge regarding the use of medicinal plants (Table 1).These plants showed varied ethnomedical implications which are highly recommended by the ethnic healers.Our documentation relies on the high valued medicinal plants in Tirumala hills.

**Author collecting *Entada rheedii* seeds from bead sellers of Nakkala tribal family**



**Author along with Yanadi tribal physician family preparing herbal products in Nagapatla reserve forest area**

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**Table-1.List of plant species selected for exploring their medicinal usage and efficacy Yanadi (Y), Nakkala (N) and Irula (I) and other Folklore (F) medications**

| S.No | Name of the Taxa | Part(s) used | Ethnomedicinal uses | Tribes |
|---|---|---|---|---|
| 1. | ***Achyranthes aspera* L.** Amaranthaceae | Root, leaf, whole plant. | Tooth-ache, mouth wash, anti-partum treatment, scorpion sting, bleeding piles, beautification of skin. | Y,I,F |
| 2. | ***Boerhavia diffusa* L.** Nyctaginaceae | Root, whole plant. | Jaundice, bowel movement, anti-partum treatment, indigestion, rejuvenator. | Y,N,F |
| 3. | ***Celosia polygonoides* Retz.** Amaranthaceae | Root, leaf, whole plant. | Diarrhoea, dandruff, insect bite, skin diseases, hair tonic, lice eradication. | Y,F,I |
| 4. | ***Cyanotis tuberosa* (Roxb.) Schultes & Schultes. f.** Commelinaceae | Tuberous roots. | Fever, sexual desires, ulcers, laxative, diabetes. | Y,F |
| 5. | ***Cyperus rotandus* L.** Cyperaceae | Root tuberous. | Stomach disorders, dysentery, diarrhoea, intermittent fever, antidote to alcoholic addicts, diabetes. | Y,N,I,F |
| 6. | ***Enicostema axillare* (Lam.) Raynal** Gentianaceae | Whole plant. | Anthelmintic, intermittents fever, blood purifier, swellings, scorpion sting. | Y,N,I,F |
| 7. | ***Gisekia pharnaceoides* L.** Gisekiaceae | Whole plant. | Anthelmintic, lice killer, sores. | Y,I,F |
| 8. | ***Givotia moluccana* (L.) Sreem.** Euphorbiaceae | Leaf, seed. | Rheumatism, dandruff, psoriasis. | Y,N,I |
| 9. | ***Opuntia dillenii* (Ker.-Gawl.) Haw.** Cactaceae | Phyllode, fruit. | Whooping cough, body pains, feet cracks, diarrhoea. | Y,I,F |
| 10. | ***Pisonea aculeata* L.** Nyctaginaceae | Root, leaf, whole plant. | Aphrodisiac, scabies, rheumatism, sore legs, body itches, pulmonary complaints | Y,I,F,N |
| 11. | ***Plumbago zeylanica* L.** Plumbaginaceae | Root, whole plant. | Scabies, abortion, filariasis, oedema, abscess, skin infection, diarrhoea, dysentery, abdominal disorders, pectic ulcers, appetizer, hyper cholostremia, leucoderma, psoriasis. | Y,N,I,F |
| 12. | ***Polycarpaea corymbosa* (L.) Lam.** Caryophyllaceae | Whole plant, leaf. | Gonorrhoea, syphilis, poisonous bites, inflammations, headache, boils, jaundice. | Y,F,I |
| 13. | ***Polygonum glabrum* Willd.** Polygonaceae | Leaf, whole plant. | Jaundice, throat pain, headache, scorpion sting, burns, cuts. | Y,N,I |
| 14. | ***Smilax perfoliata* Lour.** Smilacaceae | Root, leaf, stem bark. | Rheumatism, dysentery, nervous disorders, epilepsy, urinary complaints, leprosy, parkinsonism, rejuvenator, reducing blood pressure. | Y,N,I,F |
| 15. | ***Soymida febrifuga* (Roxb.) A. Juss** Meliaceae | Root, stem bark, whole plant, flowers, fruits. | Fever, intermittent fever, general debility, ear-ache, head-ache, diarrhoea. | Y,N,I |
| 16. | ***Stemona tuberosa* Lour.** Stemonaceae | Root tuber. | Night blindness, aphrodisiac, headache, cough, bodyache. | Y,N,I |
| 17. | ***Trianthema decandra* L.** Aizoaceae | Root, whole plant. | Paralysis, headache, eye diseases, wounds, burns. | Y,F,N,I |
| 18. | ***Trichuriella monsoniae* (L.f.) Bennet** Amaranthaceae | Root, whole plant. | Scorpion sting, headache, boils, sores wounds, cooling agent. | F,I,N |

## DISCUSSION

Andhra Pradesh harbouring 2530 angiosperms of which, 1,700 species are medicinal (Pullaiah, 1998). The above information gathered from the various informants revealed that crude compositionsobtained from the plant sources play a major role in tribal areas for curing numerous health problems. Due to elevation, undulating topography and climatic factors are favourable for the distribution of unique Phytodiversity of high valued medicinal, economical and botanical plants of rare, endangered, and endemic plant wealth along with admixture of very rich deciduous, semi-evergreen, evergreen, hydrophytic and xerophytic vegetation, which have established in different microclimatic zones on the hills are depository of numerous high valued (an individual plant taxa is used to curing numerous diseases) medicinal plant diversity.

Hence the study may form a significant contribution towards the understanding of these newly reported treatments both in primary health care and as a source of new drugs. This study found the traditional knowledge of healing and use of medicinal plants is disseminated through generations by family members. The study also revealed that the tribal and rural people of the surveyed region of tirumala hill inhabitating in chittoor district of andhra pradesh discovered numerous useful medicinal plants and most of the uses recorded are new. Therefore, the present survey makes an important addition to the growing knowledge on ethnomedicobotany

## AKNOWLEDGEMENT

Authors would like to thank the Department of Botany,NBKR educational institutions for providing the Laboratory facilities and Herbarium management.

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