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Research article

ETHNOMEDICINAL PLANTS USED BY THE TRIBALS OF ACHAMPET FOREST DIVISION IN NALLAMALAIS, TELANGANA, INDIA

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ABSTRACT: Tribal people mainly depend on their traditional knowledge to cure their ailments. Ethnomedicinal studies cumulatively contribute to the medicinal knowledge, since they are tested for a long period. The traditional practices are easy to administer and are economical as the medicinal plants are easily available to them. Tribal folklore use age old practices and recipes inherited from several generations based on the experiences and result feedback. In the present study, plants with potential medicinal value are surveyed, which are used by the local tribal community i.e. Chenchus, Erukala and Lambadas residing in Achampet forest division (Nallamalias) of Mahabubnagar Dist., Telangana. This report elucidates 60 medicinal plant species which belong to 54 genera and 34 families.
Key words: Ethnomedicinal plants, Achampet forest division, Nallamalais, Telangana.

INTRODUCTION

Traditional medicine plays a vital role in the drug development. The age old traditional practices which are passed over from generation to generation cumulatively contribute to the medicinal knowledge, since they are tested for a long period. Tribal people mainly depend on their traditional knowledge to cure their ailments as they reside remotely and medicinal plants are readily available in their surroundings. The indigenous practices are easy to administer and are economical, but at the same time this folklore knowledge is at the threat of extinction due to urbanization process, deforestation and heirs of ethnic traditional healers shifting their focus to other professions. Hence the aim of the present study is to undertake the documentation of the knowledge of tribal healers and verify it with the literature. The earlier studies on the ethnobotany of Nallamalais are C.S. Reddy *et al*.[1], D.S. Reddy[2,3], Ellis J.L.[4], Kumar D.C.T.*et al*. [5], Pullaiah and Kumar [6], Ram A.J [7], Reddy M.B. *et al*. [8], Subramanyam *et al*. [9]. However this study focused on the Achampet forest division of Nallamalais area in Mahabubnagar District of Telangana state, India.

METHODOLOGY

A. Study Area

The Nallamalais are rich in biodiversity, encompass variety of flora and fauna including a Tiger reserve forest. They are a section of the Eastern Ghats, which are located at the latitude of 15º40'41"N, longitude of 79º29' 00 E and occupy about an area of 6,740 km^2. Which stretch primarily over Mahabubnagar and Nalgonda districts in Telangana and Kurnool, Guntur, Prakasam and Kadapa districts in Andhra Pradesh. The Nallamalais consist primarily tropical southern dry mixed deciduous and southern moist mixed deciduous forests (Champion and Seth, 1968). They run in a nearly north-south alignment, parallel to the Coramandal coast for close to 430 Km between the rivers Krishna and Pennar. The study was carried out in Achampet forest division belongs to Nallamalais of Mahaboobnagar district in Telangana State (Fig.1). The interior tribal people treat their ailments with their traditional ethnobotanical knowledge as a cheaper way of treatment.

B. Data Collection

A survey was conducted through several field trips to collect the information from the traditional healers belong to Chenchu, Erukala and Lambada tribal communities. The traditional healers were interviewed separately to get information concerning the use of plants in local folk medical practices. The present study was based on the interaction with the tribal healers and was also compared with relevant literature.

Following the interviews, vouchers were collected both with the guides and with the local people. Plants were identified by their common name by the guides and local people. Plant specimens and documents were deposited in the Herbarium of the Department of Botany, Government Degree College, Ramannapet.

RESULTS AND DISCUSSION

The present survey documented the most common medicinal plants used by the local tribal healers. Wide spectrum of families had been found to be used by the tribals for the medicine preparation. Out of the 34 families reported here, Fabaceae family dominated with 5 species, followed by Mimosaceae family with 4 species and Combretaceae, Solanaceae and Zingiberaceae families represented with 3 species each(Tables 1&2). Leaves were used maximum number of times (27) for the medicine preparation followed by fruits/seeds (21), root/rhizome (11) (Figure 2). Herbs (23) and trees (21) were found to have more medicinal usage (Figure 3). *Calotropis gigantia* (L.) R.Br. was used in treatment for 5 ailments, followed by *Phyllanthus amarus* Schum.&Thorn. In treatment for 4 ailments.

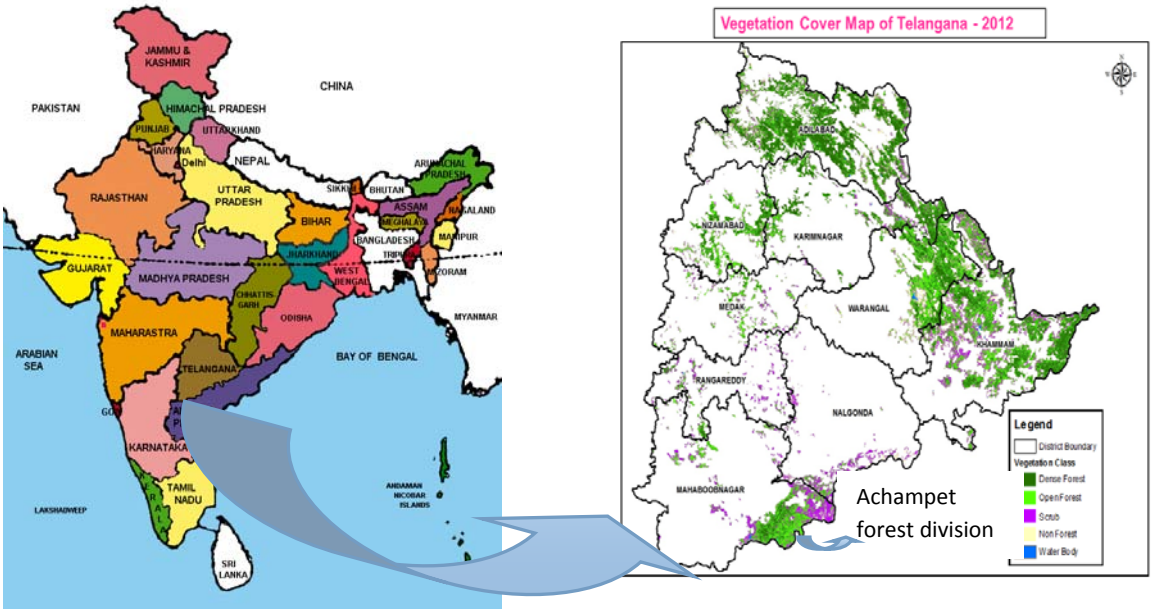

Figure 1. Geographical location of the study area in India

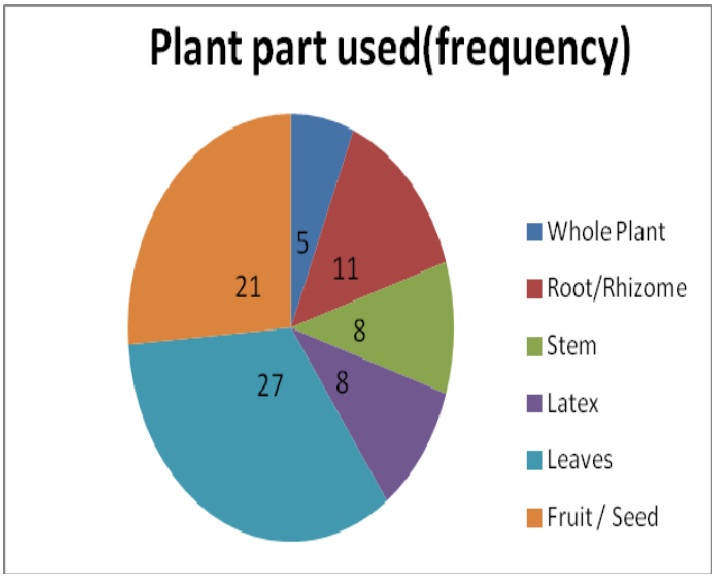

Figure 2. Usage frequency of plant parts

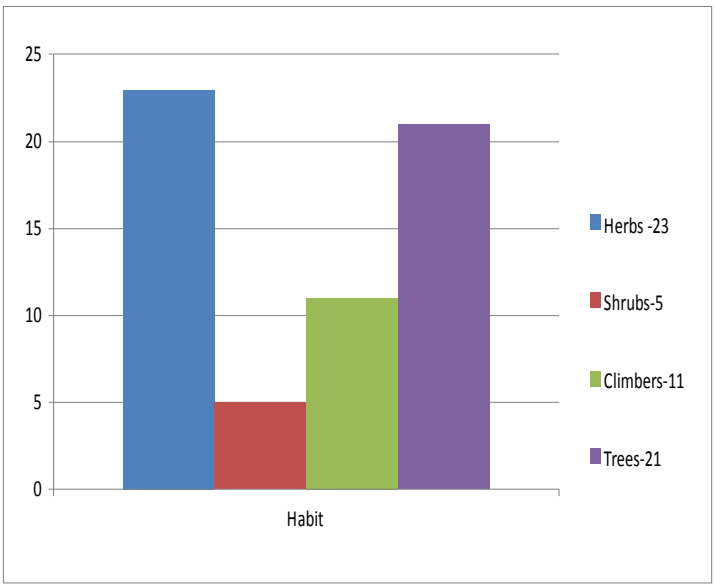

Figure 3. Analysis of habit status

Table 1: Medicinal plants used by the tribal healers and their uses

Botanical Name	Vernacular Name	H	Medicinal use	Part used	Mode of administration
1. Family: Acanthaceae ***Andrographis paniculata*** (Burm.f.)Wall.ex nees in Wall.	Nelavemu	h	1. Fever 2.Snake bite 3. Diabetes	Leaves Whole plant Leaves	1.Leaves are chewed 2.Dried plant parts are powdered and consumed with water. 3.Leaves are chewed with Betel leaf.
2. Family:Alangiaceae ***Algangium salvifolium*** (L.f.) Wang.	Oodugu	c	Snake bite	Root	Decoction of root bark administered orally
3. Family: Amaranthaceae ***Aerva launata***(L.) Juss.ex Schult.	Pindikura	h	Kidney stones	Whole plant	Decoction of dried plant parts is orally administered twice a day.
4.Family: Anacardiaceae ***Buchanaria lanzan*** Spr.	Sarapappu (Murli)	t	Stomachache	Seeds	Seeds are soaked in water overnight and gum formed around the seeds is consumed.
5.Family: Annonaceae ***Annona squamosa*** L.	Seethaphalam	s	1.Epilepsy 2.Snake bite	Leaves Stem	1.Smell the leaf paste. 2.Paste of the stem (grown towards east) bark is applied.
6.Family: Apiaceae ***Cuminum cyminum*** L.	Jeelakarra	h	Spermatorrhoea (Involuntary loss of semen)	Seeds	Seed powder is mixed with fresh leaf juice of ***Prosopis cineraria*** (L.), sugar candy and administered orally daily.

7.Family: Aristolochiaceae ***Aristolochia indica*** L.	Nallaeswari	c	1.Cough 2.Diabetes	Whole plant Roots	1.Powdered and a spoon of it to be taken with water 2.Root paste is administered orally
8. Family: Asclepiadaceae a. ***Calotropis gigantia*** (L.) R.Br.	Jilledu	s	1.Pus in ear 2.Thorns 3.Heat boils 4.Scorpion bite 5. Snake bite	Leaves Latex Latex Latex Latex	1.Ripened leaves are flame heated and their juice is used as ear drops 2.Latex is dropped on the site where thorn tip is stuck, tip comes out easily 3.Latex is applied on the boils 4.Latex is applied and warmed 5.Latex is dropped into nostrils
b.***Hemidesmus indicus*** (L.)R.Br.var.indicus Wt.	Nannari, Budapala	c	Blood purifier	Roots	Decoction of ground roots is added to milk and taken orally
c. ***Sarcostemma secamone*** (L.)Bennet.	Pullajemudu, Kondapalatiga	c	Stammering	Latex	Latex mixed with honey is orally dropped
9. Family: Asteraceae a.***Eclipta prostrate*** (L.) Mant.	Guntagalijeru	h	Wounds, burns	Leaves	Leaf paste is applied on the wounds for instant healing without scars
b.***Tridax procumbens*** L.	Gayapaku	h	Wounds	Leaves	Leaf paste is applied on the wounds for instant cure
10. Family: Aizoaceae ***Trianthema decandra*** L.	Tella galijeru	h	Jaundice	Root	Root bark paste is applied into the eyelids
11. Family: Cactaceae ***Cereus pterogonus*** Lam.	Palakajamudu	s	Knee pain	Latex	Latex is applied on knee joints and atta flour is sprayed
12. Family: Caesalpinaceae a. ***Caesalpinia bonduc*** (L.) Roxb. b. ***Cassia italica*** (Mill.) Lam.ex.Andr. c. ***Cassia fistula*** L.	 Gaccha Nelathangedu Rela	 t h t	 Hydrocele Constipation Skin diseases	 Leaves Leaves Stem bark	 Flame heated leaves are ground and applied around affected part Dried leaf powder, a spoonful is taken orally with warm water. Stem bark paste is applied externally on the affected site
13. Family:Combretaceae a. ***Terminalia arjuna*** (Roxb.ex DC.)Wt.&Arn.	Tellamaddi	t	Cardio tonic	Stem bark	A spoon of stem bark powder is taken orally with water
b.***Terminalia bellerica*** (Gaertn.) Roxb.	Tanikaya	t	1.Piles 2.Leucorrhea	Fruit Fruit	1.Fruit pulp is powdered and taken a spoon with buttermilk 2.A spoon of powder is mixed with honey and taken orally
c. ***Terminalia chebula*** Retz.	Karakkaya	t	Cough	Fruit	A spoon of powder is wrapped with betel leaf and chewed/ a spoonful of powder mixed with rocksalt is taken orally

14. Family:Cucurbitaceae ***Momardica charantia*** L.	Kakarakaya	t	Edema	Leaves	Leaf juice is mixed with curd and orally administered
15.Family: Euphorbiaceae a. ***Phyllanthus amarus*** Schum.&Thorn.	Nelusiri, Nallusiri	h	1.Jaundice	Leaves	1.Leaves are ground with turmeric, paste is taken in a round pill size daily in empty stomach
			2.Joint pains	Leaves	2.Leaf juice is mixed with sugar, cow milk and cumin powder taken two spoons orally
			3. Snake bite	Leaves	3.Leaf juice is squeezed at the site
			4.Debility	Leaves	4.Leaf paste mixed with sugar is consumed in empty stomach
b. ***Phyllanthus emblica*** L.	Usiri	t	1.Leucorrhea	Fruit	1.A spoon of powdered fruit pulp is taken with honey
			2.Loose teeth	Fruit	2.Fruit pulp powder is mixed with karaka powder and used as toothpowder
16.Family: Fabaceae a. ***Abrus precatorius*** L.	Guriginga	c	Leucorrhea	Leaves	Leaf paste mixed with garlic is administered orally.
b. ***Butea monosperma*** (Lam.) Taub.	Moduga	t	Jaundice	Stem	Secretion from the stem cutting is applied to eyes.
c. ***Glycirrhiza glabra*** L.	Athimaduram	s	Leucorrhea	Stem	Stem bark powdered and orally administered with water for 41days
d.***Mucuna pruriens*** (L.)DC.	Duradagondi, Doolagondi	c	Impotency	Seeds	Seeds are powdered and a spoon of it is taken with a cup of warm milk.
e.***Trigonella foenum-graecum*** L.	Menthulu	h	1.Intestinal Worms	Leaves	1.Leaves are chewed with tamarind
			2.Diabetes	Seeds	2.Seeds are soaked in water overnight and water is administered orally.
17.Family: Lamiaceae ***Ocimum tenuiflorum*** L.	Thulasi	h	1.Epilepsy	Leaves	1.Smell the leaf paste for relief
			2.Honeybee sting	Root	2.Root bark paste is applied on the site
18.Family: Liliaceae a. ***Aloe vera***(L.)Burm.f.	Kalamanda	h	1.Flatulence 2.Ulcer 3.Menstrual pain	Leaves	For 1,2 and 3. Gelatinous mucilage is consumed with or without sugar
b. ***Asparagus racemosus*** Willd.	Pillipeechara, Sathavari	c	Insufficient Lactation	Roots	A spoon of root powder is taken with warm milk daily

19.Family: Menispermaceae a. ***Cocculus hirsutus*** (L.)Diers. b. ***Tinospora cordifolia*** (Willd.)Miers.ex Hook.f.&Thoms	Doosara Tippateege	c c	Thorn bite Diabetes	Leaves Whole plant	1.Leaf paste mixed with jaggery and applied where thorn tip is stuck Whole plant extract (Tippasattu) is mixed with pasted banyan tree bark and is consumed
20.Family: Mimosaceae a***. Acacia nilotica***(L.) Willd.ex Del. Subsp indica(Benth.) Branam. b. ***Albizia lebbeck*** (L.) Benth. c. ***Entada rheedi*** Spr. d. ***Prosopis cineraria*** (L.)Druce.	Nalla thumma Dirisena Adavichintha Jammi	h t c t	Motions Fever Joint pains 1.Cracks in the feet 2.Spermato-rrhoea	Leaves Stem bark Seeds Leaves Leaves	Leaf paste is administered orally after breakfast and in the evening(Heat causing food to be avoided). Bark extracted with water is administered orally. Seed powder is boiled with Camphor in Coconut oil and applied on joints. 1.Dried leaf powder mixed with Aloe juice and honey is made small doses and taken twice orally(Non-veg to be avoided) 2.Leaf juice with Cumin powder and sugar candy in empty stomach is taken orally.(avoid sour food)
21.Family:Moraceae a. ***Ficus benghalensis*** L.var.***benghalensis*** b. ***Ficus hipsida*** L.f.	Marri Bramhamedi	t t	Diabetes Boils	Stem bark Latex	Bark is mixed with Tinospora cordifolia leaves and taken orally. Latex is applied on the boils.
22.Family:Myrtaceae a.***Psidium guajava*** L. b. ***Syzygium cumini***(L.) Skeels.	Jama Allaneredu	t t	Diabetes Diabetes	Leaves Seeds	Leaves are soaked overnight in water and in the morning water is drunk. Seeds are chewed.
23.Family: Pedaliaceae ***Pedalium murex***(L.)	Yenugu(Peda) palleru	h	Impotency Weakness	Seeds	Cloth filtered powder is administered orally with warm milk.
24. Family:Piperaceae ***Piper betle*** L.	Thamalapaku	c	Cough	Leaves	Chewed with ***Terminalia chebula*** powder
25.Family: Plumbaginaceae ***Plumbago zeylanica*** L.	Chitramulam	h	Scorpion bite	Root	Water extracted paste is applied on the site.
26. Family:Poaceae a. ***Cynodon dactylon*** (L.) Pers. b. ***Sorghum vulgare*** Pers.	Garika Jonna	h h	(Galactogogue) Insufficient lactation Dog bite	Leaves Seeds	Leaf paste administered orally along the milk. Orally chewed seeds' paste mixed with turmeric and applied on the site.(eating fish, brinjal, sorrel and potato to be avoided)
27.Family: Ramnaceae ***Ventilago maderaspatana*** Gaertn.	Surugudu	h	Edema	Latex	Latex is administered orally

28.Family:Rutaceae a. ***Aeglemarmolos***(L.) Corr. b.***Limonia acidissima*** L.	Maredu bilvam Velaga	t t	Loose motions Vomiting	Fruit Fruit	Juice is prepared and orally consumed Woody epicarp is burnt, a spoon of honey is mixed with it, dissolve in lemon juice and orally administered
29.Family: Solanaceae a. ***Datura metal*** L. b***. Solanum surattens*** burm f. c. ***Withania somnifera*** (L.) Dunal in DC.	Ummettha Vakudu Dommadolu gadda	s h h	Nail infection 1.Cough 2.Dog bite Weakness/ debility	Leaves Ripen fruits Fruits Roots	Leaf juice is dropped on the site of infection pus comes out. 1.Fruit juice is orally administered as drops. 2.Fruits are crushed and orally administered Powder is administered orally with warm milk (wild cow).
30.Family: Strychnaceae a. ***Strychnos nux-vomica*** L. b. ***Strychnos potatorum*** L.f.	Musti Chillaginja	t t	1.Scorpion bite 2. High B.P. 3.Diabetes 1.Swelling, inflammation 2.Scorpion bite	Seed Seed Stem Seed Seed	1.Seed paste extracted with water, flame heated and applied 2.Half of seed is powdered and orally administered 3.Stem bark is soaked overnight in the water and water is consumed. 1.Seeds along with asafetida boiled in oil and oil is applied 2.Seed paste extracted with water is applied on the site.
31. Family: Ulmaceae ***Holoptelea integrifolia*** (Roxb.)Planch	Nemalichettu	t	Asthma	Leaves	Leaf paste is taken orally
32. Family:Verbenaceae ***Vitex negundo*** L.	Vavilaku	t	Headache	Leaves	Leaves are taken in a pot, flame heated and pot is kept inverted on the head
33. Family: Violaceae ***Hybanthus enneaspermus***(L.)Muell	Ratna purusha	h	Low sperm count	Whole plant	Dried parts powdered and consumed with Ashwaganda powder and warm cow's milk.
34. Family:Zingiberaceae a. ***Curcuma pseudomontana*** Grahm b. ***Hedychium coronarium*** Koen. in Retz. c. ***Zingiber officinal*** Rosc.	Adavipasupu Dumpa rastrum Sonti	h h h	Skin problems Cough, Asthma 1.Headache 2.Joint pains, indigestion	Rhizome Rhizome Rhizome	Powder is pasted with water and applied. Powder/paste of rhizome is mixed with honey and administered orally. 1. A pinch of paste is extracted with water and applied into eyelids. 2. Powder is administered orally in empty stomach with water.

Description: H=habit, h=herb, c= climber, s= shrub, t= tree

Table 2: List of the families with the number of species used for medicine

S.No.	Family name	Number of species	S.No.	Family name	Number of species
1	Acanthaceae	1	18	Liliaceae	2
2	Alangiaceae	1	19	Menispermiaceae	2
3	Amaranthaceae	1	20	Mimosaceae	4
4	Anacardiaceae	1	21	Moraceae	2
5	Annonaceae	1	22	Myrtaceae	2
6	Apiaceae	1	23	Pedaliaceae	1
7	Aristolochiaceae	1	24	Piperaceae	1
8	Asclepiadaceae	3	25	Plumbaginaceae	1
9	Asteraceae	2	26	Poaceae	2
10	Aizoaceae	1	27	Ramnaceae	1
11	Cactaceae	1	28	Rutaceae	1
12	Caesalpianaceae	3	29	Solanaceae	3
13	Combretaceae	2	30	Strychnaceae	2
14	Cucurbitaceae	1	31	Ulmaceae	1
15	Euphorbiaceae	2	32	Verbenaceae	1
16	Fabaceae	5	33	Violaceae	1
17	Lamiaceae	1	34	Zingiberaceae	3

CONCLUSIONS

There are considerable benefits in the development of indigenous medicines and in the use of medicinal plants for the treatment of various diseases as they are affordable to common man with less known side effects. The Nallamala forest area is a rich source of plant diversity. To some extent it lists out the medicinal wealth of this area. The benefits of the indigenous knowledge of tribals can be offered to the vast majority of population by establishing its medicinal usage for specific identified diseases. This study may serve as a source to the further Pharmacognostical, Pharmacological and Phytochemical studies.

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