

Ethnomedicinal plants used by Valmiki tribes of Munchingiputtu Mandal, Alluri Sitaramaraju District, Andhra Pradesh, India

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World Journal of Biology Pharmacy and Health Sciences, 2023, 14(03), 177–182

Publication history: Received on 25 April 2023; revised on 10 June 2023; accepted on 13 June 2023

Article DOI: <https://doi.org/10.30574/wjbphs.2023.14.3.0241>

Abstract

An ethnomedicinal survey was carried out among the ethnic group of Valmiki tribes inhabited in Munchingiputtu Mandal, Alluri Sitaramaraju District, Andhra Pradesh during 2022-2023. A total of 68 plant species belonging to 60 genera and 34 families of ethnomedicinal plants were reported. All the plants need to be evaluated through phytochemical investigations to discover their potential as drugs. The study shows a high degree of novelty in the use of plants among the tribal people reflecting the revival of interest in traditional medicine.

Keywords: Ethnomedicine; Valmiki tribes; Munchingiputtu Mandal; Alluri Sitaramaraju District; Andhra Pradesh

1. Introduction

Ethnobotanical investigations have led to the documentation of a large number of wild plants used by tribals for meeting their multifarious requirements [1]. In 1960, Jain started intensive field studies among tribal areas of central India [2-8]. India is inhabited by over 80 million tribals belonging to about 550 tribal communities. It is estimated that about 17,500 angiosperm species alone are occurring in India [9]. The flora of India is very diverse on one hand and rich in endemic taxa on the other. These factors are of significance for the richness of ethnomedicine and also for its uniqueness [10]. Singh [11] published 29 medicinal plants which were commonly used by local tribes of the Mannanur forest and also studied their biological activity. Rama Rao [12] reported 7 unknown or less known medicinal plants which are exclusively used for various ailments by the Aborigines. Hemadri [13] studied the medicinal wealth of the Chittoor district. Prakasa Rao and Harasreeramulu [14] presented authentic data on 52 selected medicinal plants along with their ethnobotanical uses and distribution in the Srikakulam district. Rama Rao and Henry [15] reported the ethnomedicinal practices of the Jatapu and Savara tribal communities of the Srikakulam district. Padal [16] reported ethnomedicinal plants used by tribal people of the Paderu division, Visakhapatnam district.

2. Material and methods

2.1. Study area

The majority of the people in the Munchingiputtu Mandal are Valmiki tribes, They are, as a class, more civilized and less excitable than the Bagatha. At least 80 percent of the total area of the Munchingiputtu Mandal is covered with forests, the rest being under either shifting cultivation on hillsides, or permanent cultivation on low grounds. In the hills, the forest consists of a mixed deciduous type, the predominating species being *Annogeissus* mixed with *bamboo*, *Cleistanthus* and softwoods. On the hilltops, a few crooked and stunted *Dalbergia latifolia* occur. On the slopes where the soil is shallow and poor, inferior species, such as *Sterculias Cochlospermum*, *Odina Wodier* and *Bombax* occur. There is a good

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sprinkling of tamarind trees on some of the hills, which seem to yield a fair crop. At the foot of the hills and in the "lankas" the growth consists generally of *Xylia Xylocarpa* and *Terminalia* with a few *Pterocarpus marsupium*. On the stream, banks are usually found a few large mango trees, *Terminalia arjuna* and *Bambusa arundanacea*.

2.2. Methodology

The approaches and methodologies for ethnomedicinal work, suggested by Jones [17], Schultes [18-19], Jain [20] were followed. Emphasis was given mainly on intensive fieldwork in selected tribal habitations. The ethnobotanical information was collected through interviews, discussions and own observations Jain and Rao [21], Jain [22]. The ethnomedicinal data presented here are the outcome of a series of intensive field studies conducted over one and a half years in 34 interior tribal pockets with good forest cover in the study area.

3. Results and discussion

During exploration trips, medicinally useful information have been recorded on 68 plant species belonging to 60 genera and 32 families were recorded which are exploited by the tribals for their day-to-day living.

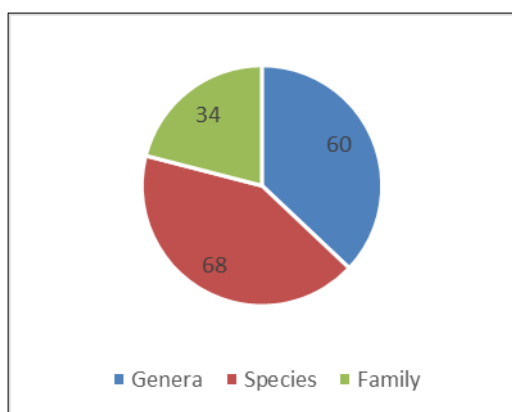


Figure 1 Genera, species and family EMPs

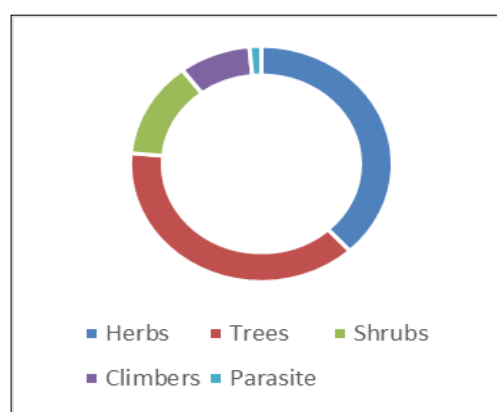


Figure 2 Habit-wise analysis of EMPs

The family-wise analysis of ethnomedicinal data revealed that of the 34 families, the dominant ones are Apocynaceae represented by 7 species followed by Caesalpiniaceae with 6, Fabaceae with 5 species, Araceae, Asteraceae, Solanaceae, Rubiaceae, Anacardiaceae and Amaranthaceae with 3 species, Acanthaceae, Lamiaceae, Mimosaceae, Moraceae and Solanaceae with 2 species each and other 20 families each one has single species. The morphological plant parts used for ethnomedicinal purposes were classified into leaf, root, stem bark, whole plant, seed, fruit, flower, stem, gum, latex, rhizome, root bark, fronds, inflorescence, seed, tuber, and unripe fruit. Intensive surveys and repeated personal interviews in different pockets resulted in coming across 30 diseases in the area. The common diseases prevailing in tribal group habitations are ascertained in consultation with local doctors. The most common ailments are Abortion (3), Acidity (1), Allergy (1), Anthelmintic (4), Antifertility (1), Asthma (5), Blood pressure (1), Boils (4), Bone fracture (2), Breast pain (1), Cold (2), Conjunctivitis (1), Diabetes (1), Diarrhoea (5), Digestive tonic (1), Dysentery (3), Dysmenorrhoea (2), Dyspepsia (1), Earache (1), Epilepsy (2), Fever (3), Gonorrhoea (2), Headache (3), Hydrocele (1), Jaundice (4), Leucorrhoea (3), Mental disorders (2), Rheumatism (3), Stomach pain (3) and Swellings (2) (Table .1). The given practices have been followed by the different vaidyas of this forest since generations; they have acquired the knowledge of these practices from their ancestors. For example, the roots of *Rauvolfia serpentine* are used to treat snake bites, similarly, the most common plants used for general purposes are *Caryota urens*. A notable contribution to ethnomedicinal plants from Andhra Pradesh, Venkaiah [23] reported 600 plants in Northern districts of Andhra Pradesh in his NATP Biodiversity Project Work. Lakshmi [24] studied ethnobotanical information of 220 species in Vizianagaram district. Rama Rao Naidu [25] reported ethnomedicinal plants of the Srikakulam District.

The root decoction of it with rhizome powder of *Zingiber officinale* is used to cure malaria and leaves and stem bark decoction for blood purification [26-28] reported 11 claims of folklore medicine for leucorrhoea by local tribes of Andhra Pradesh and Orissa. Venkata Ratnam and Venkata Raju [29] dealt with 25 crude drugs used by Adivasis in the Eastern Ghats for curing leucorrhoea. Harish Singh [30] dealt with 15 plant species belonging to 13 families used traditionally by the tribal people of the Mayurbhanj district of Odisha for the treatment of leucorrhoea. Krishna Prasad [31] studied food plants and their seasonal availability, and growing patterns from Rampa Agency, East Godavari district, Andhra Pradesh.

Table 1 Ethnomedicinal plants used by primitive Valmiki tribes, G. Madugula Mandal, Alluri Sitaramaraju District

Common name	Botanical Name	Family	Habit	Parts	Disease
Uttareni	<i>Achyranthes aspera</i> L.	Amaranthaceae	Herb	Seed	Mental disorders
Vasa	<i>Acorus calamus</i> L.	Araceae	Herb	Rhizome	Cold
Gatumandu	<i>Adiantum lunulatum</i> Burm. f.	Adiantaceae	Herb	Leaf	Abortion
Kambachettu	<i>Adina cordifolia</i> (Roxb.) Hook. f.	Rubiaceae	Tree	Stem bark	Leucorrhoea
Pindikura	<i>Aerva lanata</i> (L.) Juss.	Amaranthaceae	Herb	Root	Headache
Uduga	<i>Alangium salviifolium</i> (L.f.) Wangerin	Alangiaceae	Tree	Leaf	Rheumatism
Edakulapala	<i>Alstonia venenata</i> R.Br.	Apocynaceae	Shrub	Stem bark	Anthelmintic
Mullathotakura	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Herb	Root	Dyspepsia
Adavikandha	<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson	Araceae	Herb	Corm	Bone fracture
Sitapalam	<i>Annona squamosa</i> L.	Annonaceae	Tree	Root	Abortion
Dhamma saaru	<i>Arisaema tortuosum</i> (Wall.) Schott	Araceae	Herb	Tuber	Headache
Gadidagadapaku	<i>Aristolochia indica</i> L.	Aristolochiaceae	Climber	Root	Diarrhoea
Vepa	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Tree	Leaf	Allergy
Kadapa Chettu	<i>Barringtonia acutangula</i> (L.) Gaertn.	Barringtoniaceae	Tree	Leaf	Headache
Arichettu	<i>Bauhinia racemosa</i> Lam.	Caesalpiniaceae	Tree	Stem bark	Asthma
Addaku	<i>Bauhinia vahlii</i> Wight & Arn.	Caesalpiniaceae	Climber	Root	Dysentery
Buruga	<i>Bombax ceiba</i> L.	Bombacaceae	Tree	Leaf	Leucorrhoea
Sarepappu	<i>Buchanania lanzan</i> Spreng.	Anacardiaceae	Tree	Stem bark	Boils
Gachakaya	<i>Caesalpinia bonduc</i> (L.) Roxb.	Mimosaceae	Shrub	Seed	Abortion
Jilledu	<i>Calotropis gigantea</i> (L.) Dryand.	Asclepiadaceae	Shrub	Root	Stomach pain
Aridonda	<i>Capparis zeylanica</i> L.	Capparaceae	Shrub	Root bark	Earache
Chanupala	<i>Cassia absus</i> L.	Caesalpiniaceae	Herb	flower	Asthma
Tamaramokka	<i>Cassia alata</i> L.	Caesalpiniaceae	Herb	flower	Asthma
Kasinta	<i>Cassia occidentalis</i> L.	Caesalpiniaceae	Herb	Root	Anthelmintic
Savaralu	<i>Cassytha filiformis</i> L.	Cuscutaceae	Parasite	Plant	Hydrocele
Palabaddu	<i>Cryptolepis buchananii</i> Roem. & Schult.	Apocynaceae	Climber	Root	Diarrhoea
Iridi	<i>Dalbergia latifolia</i> Roxb.	Fabaceae	Tree	Stem bark	Fever
Ummeta	<i>Datura stramonium</i> L.	Solanaceae	Shrub	Root	Asthma
Seetammajada	<i>Desmodium gangeticum</i> (L.) DC.	Fabaceae	Herb	Leaf	Acidity
Nelamarri	<i>Elephantopus scaber</i> L.	Asteraceae	Herb	Root	Anthelmintic

Marri	<i>Ficus benghalensis</i> L.	Moraceae	Tree	Leaf	Boils
Juvvi	<i>Ficus racemosa</i> L.	Moraceae	Tree	Stem bark	Diarrhoea
Kambha	<i>Garuga pinnata</i> Roxb.	Rubiaceae	Tree	Stem bark	Stomach pain
Chamalanara	<i>Helicteres isora</i> L.	Tiliaceae	Shrub	Fruit	Dysentery
Ramabanam	<i>Hemionitis arifolia</i> (Burm. f.) T. Moore	Hemionitidaceae	Herb	Plant	Digestive tonic
Palakodisa	<i>Holarrhena pubescens</i> Wall. ex G. Don	Apocynaceae	Shrub	Bark	Asthma
Palateega	<i>Ichnocarpus frutescens</i> (L.) W.T. Aiton	Apocynaceae	Climber	Root	Epilipsy
Ramabanam	<i>Ixora pavetta</i> Andr.	Rubiaceae	Shrub	Stem bark	Jaundice
Ranabheri	<i>Leonotis leonurus</i> (L.) R.Br.	Lamiaceae	Herb	Inflorescence	Breast pain
Naramamidi	<i>Litsea glutinosa</i> (Lour.) C.B. Rob.	Lauraceae	Tree	Stem bark	Rheumatism
Sindhuram	<i>Mallotus philippensis</i> (Lam.) Müll. Arg.	Euphorbiaceae	Tree	fruit	Anthelmintic
Mamidi	<i>Mangifera indica</i> L.	Anacardiaceae	Tree	Gum	Boils
Nidraganneru	<i>Mimosa pudica</i> L.	Mimosaceae	Herb	Root	Epilipsy
Dhulagondi	<i>Mucuna acuminata</i> Baker	Fabaceae	Climber	Root	Dysmenorrhoea
Pullabatchala	<i>Naravelia zeylanica</i> (L.) DC.	Smilacaceae	Climber	Leaf	Cold
Thulasi	<i>Ocimum basilicum</i> L.	Lamiaceae	Herb	Seed	Diarrhoea
Krishna Tulasi	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Herb	Leaf	Conjunctivitis
Chiitieetha	<i>Phoenix sylvestris</i> (L.) Roxb.	Aricaceae	Tree	Root	Asthma
Nelausiri	<i>Phyllanthus amarus</i> Schumach. & Thonn.	Euphorbiaceae	Herb	Plant	Jaundice
Usirichettu	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Tree	Leaf	Bone fracture
Pathalagaridi	<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz	Apocynaceae	Herb	Root	Fever
Pathalagaridi	<i>Rauwolfia tetraphylla</i> L.	Apocynaceae	Herb	Root bark	Blood pressure
Mangalikatthi	<i>Rubia cordifolia</i> L.	Rubiaceae	Herb	Root	Stomach pain
Nalla jeedi	<i>Semecarpus anacardium</i> L.f.	Anacardiaceae	Tree	Seed	Swellings
Ganneru	<i>Sida acuta</i> Burm.f.	Malvaceae	Herb	Root	Boils
Kamanchi	<i>Solanum nigrum</i> L.	Solanaceae	Herb	Plant	Gonorrhoea
Mullavnga	<i>Solanum surattense</i> Burm. f.	Solanaceae	Herb	Root bark	Jaundice
Somida	<i>Soyimida febrifuga</i> (Roxb.) A. Juss.	Miliaceae	Tree	Root	Dysmenorrhoea
Kovelachettu	<i>Sterculia urens</i> Roxb.	Sterculiaceae	Tree	Root	Antifertility
Rugechettu	<i>Streblus asper</i> Lour.	Zygophyllaceae	Tree	Stem bark	Diarrhea
Chinta	<i>Tamarindus indica</i> L.	Caesalpinaceae	Tree	Bark	Asthma
Kommi	<i>Tarenna asiatica</i> (L.) Kuntze ex K. Schum.	Verbenaceae	Shrub	Stem bark	Dysentery
Vempali	<i>Tephrosia hirta</i> Bojer	Fabaceae	Herb	Root	Fever
Tellamaddi	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Combretaceae	Tree	Bark	Asthma
Ankudu	<i>Wrightia tinctoria</i> R.Br.	Apocynaceae	Tree	Bark	Asthma

Kondatangedu	<i>Xylia xylocarpa</i> (Roxb.) Taub.	Fabaceae	Tree	Root	Gonorrhoea
Adaviallum	<i>Zingiber roseum</i> (Roxb.) Roscoe	Zingiberaceae	Herb	Root	Leucorrhoea
Konda Regu	<i>Ziziphus rugosa</i> Lam.	Rhamnaceae	Tree	Leaf	Diabetes

4. Conclusion

The medicinal plants used in the local health traditions are gradually becoming extinct due to developmental activities, population explosion and other anthropogenic reasons. To reverse this trend, the domestication of wild medicinal plants is of utmost importance. Industrialization, urbanization, modernization and the consequent developmental activities on one side and acculturation of the ethnic societies on the other have set in motion causing destruction of forests and devastation of ethnobotanical knowledge. The natural vegetation of Alluri Sitaramaraju district is also being destroyed at an alarming rate as a direct consequence of human activities. In this context, it is suggested that medicinal plant cultivation or farming should be taken up in all the open forest areas by the tribals.

Compliance with ethical standards

Acknowledgments

The authors are thankful to the notified and denotified Valmiki tribal groups and forest officials who provided valuable information on this subject for their help and cooperation extended in several ways.

Disclosure of conflict of interest

The authors declare that they hold no competing interests.

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