

## Ethnomedicinal plants used by primitive tribes of Parvathipuram Manyam District, Andhra Pradesh, India

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### Abstract

An ethnomedicinal survey was carried out from Parvathipuram Manyam District, Andhra Pradesh, India. For documentation of important ethnomedicinal plants and information from local primitive community about their medicinal uses. The traditional knowledge of primitive tribes traditional uses were collected through questionnaire and personal interviews during field trips. The identification and nomenclature of the listed plants were based on the Flora of Andhra Pradesh. A total of 150 plants species belong to 123 genera and 65 families were identified by taxonomic description and locally by ethnomedicinal knowledge of people existing in the region.

**Keywords:** Ethnomedicinal plants; Primitive tribes; Parvathipuram Manyam District; Andhra Pradesh

### 1. Introduction

India is a treasure of biodiversity which host a large variety of plants and ranks tenth among plant rich countries of the world and fourth among the Asian countries. India is the largest producer of medicinal plants and is rightly called the “Botanical garden of the World”. In India, 45,000 plant species have been identified, out of which about 15-20,000 plants are of good medicinal value. About 2,500 plant species belonging to more than 1,000 genera are used by traditional healers. Ethnobotanical investigations have led to the documentation of a large number of wild plants used by tribals for meeting their multifarious requirements [1].

In India, organized study on ethnobotany is of recent origin. Studies on ethnobotany were initiated by Janaki Ammal as an official programme in the Economic Botany Section of Botanical Survey of India (Howrah). She published a paper on subsistence economy of India [2]. From 1960, Jain started intensive field studies among tribal areas of central India [3-9]. Ramarao Naidu *et al.* [10] dealt with ethnomedicobotany of Srikakulam district and reported 25 plant species belonging to 18 families used by the tribals for curing dental disorders. Rao and Reddi [11] reported 35 tuberous medicinal plant species used for a variety of ailments by certain tribal people of Visakhapatnam district. Pragada *et al.*, [12] reported 40 medicinal plants used for dysentery by tribal people of North Coastal Andhra Pradesh. The main objectives of the present investigation are collection, identification and documentation of the plants used by tribal community, taxonomic analysis and systematic evaluation of drug yielding plants.

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## 2. Material and methods

### 2.1. Study area

Ethnomedicinal information collected from Parvathipuram Manyam District, Andhra Pradesh, which is located in the Eastern Ghats are located between 11° 31' and 22° N latitude and 76° 50' and 86° 30' E, longitude in a North-East to South-West strike. The Ghats cover an area of about 75,000 Sq. Km within average width of 200 Km in the North and 100 Km in the South. The tribal region of the district comprises mainly of Jatapu, Savara, Gadaba, Konda Dora and Muka dora tribes among which the Jatapu and Savaras were predominant. They practice podu cultivation followed via horticulture and minor forest produce collection.

### 2.2. Methodology

The collected specimens were identified only after a critical examination with the help of different floras like Flora of the Presidency of the Madras [13], Flora of Visakhapatnam District [14], and Flora of Vizianagaram District [15]. The voucher specimens were deposited at the Botany Department Herbarium (BDH), Andhra University, and Visakhapatnam. Data on ethnomedicine is arranged alphabetically by botanical names, family names, vernacular names, habits, useful parts, and diseases (Table 1).

**Table 1** Ethnomedicinal plants used by tribal people of Parvathipuram Manyam District

Sr. No	Botanical name	Family	Habit	Parts	Ailments
1	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Shrub	Leaves	Laxatives
2	<i>Acacia caesia</i> (L.) Willd	Mimosaceae	Shrub	Flowers	Menstrual
3	<i>Acacia catechu</i> Willd.	Mimosaceae	Tree	Bark	Stomach ache
4	<i>Acacia nilotica</i> (L.) Del	Mimosaceae	Tree	Bark	Mouth Wash
5	<i>Acacia sinuata</i> (Lour.) Merr.	Mimosaceae	Shrub	Pods	Purgative
6	<i>Acalypha indica</i> Forsk.	Euphorbiaceae	Herb	Whole plant	Cough
7	<i>Acalypha paniculata</i> Miq	Euphorbiaceae	Herb	Leaves	Skin disease
8	<i>Acorus calamus</i> L.	Araceae	Herb	Rhizomes	Nervous Disease
9	<i>Adhatoda vasica</i> Nees	Acanthaceae	Shrub	Leaves	Bronchitis.
10	<i>Adiantum lunulatum</i> Burm.	Adiantaceae	Herb	Whole plant	Abortifacient
11	<i>Aegle marmelos</i> (L.) Correct.	Rutaceae	Tree	Fruit	Diarrhoea.
12	<i>Aerva lanata</i> (L.) Just.	Amaranthaceae	Herb	Whole plant	Kidney problems
13	<i>Ailanthus excelsia</i> Roxb.	Sterculiaceae	Tree	Bark	Neuritis
14	<i>Aloe barbadensis</i> Mill.	Liliaceae	Herb	Stem	Eye problem
15	<i>Alstonia scholaris</i> R.Br.	Apocynaceae	Tree	Bark	Helminthic
16	<i>Amaranthus gangeticus</i> Linn.	Amaranthaceae	Herb	Whole plant	Menstrual
17	<i>Amaranthus spinosus</i> L	Amaranthaceae	Herb	Leaves	Diuretic
18	<i>Amorphophallus campanulatus</i> (Roxb.)	Araceae	Herb	Corm	Dysentery
19	<i>Amorphophallus paeonifolius</i> (Dunst.)	Araceae	Herb	Fruit	Toothache
20	<i>Anacardium occidentale</i> L.	Anacardeaceae	Tree	Bark	Diarrhoea
21	<i>Andrographis paniculata</i> (Burm.f.) Wall.	Acanthaceae	Herb	Whole plant	Diabetes
22	<i>Annona reticulata</i> L.	Annonaceae	Tree	Seeds	Diarrhoea
23	<i>Anogeissus acuminata</i> (Roxb) Wall	Combretaceae	Tree	Roots	Jaundice

24	<i>Aremone mexicana</i> L.	Papaveraceae	Herb	Latex	Eye problem
25	<i>Arisaema tortuosum</i> (Wall.) Schott.	Araceae	Herb	Tubers	Worms killing
26	<i>Aristolochia indica</i> L.	Aristolochaceae	Climber	Root	Stimulant
27	<i>Artemesia abisinthium</i> L.	Asteraceae	Herb	Leaves	Fever
28	<i>Artocarpus heterophyllus</i> Lam	Moreceae	Tree	Leaves	Fever
29	<i>Atalantia monophylla</i> (L.) Corr.	Rutaceae	Shrub	Seeds	Rheumatism
30	<i>Barleri acristata</i> L.	Acanthaceae	Herb	Leaves	Cough
31	<i>Barleria strigosa</i> Willd	Acanthaceae	Herb	Whole plant	Antiseptic
32	<i>Bauhinia purpurea</i> L.	Caesalpiniaceae	Tree	Flowers	Dysentery
33	<i>Bauhinia racemosa</i> Lam.	Caesalpiniaceae	Tree	Leaves	Malaria fever
34	<i>Biophytum sensitivum</i> DC	Oxalidaceae	Herb	Seeds	Wounds
35	<i>Blumea bifoliatal</i> DC in Wight	Asteraceae	Herb	Leaves	Skin disease
36	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Herb	Whole plant	Asthma
37	<i>Boerhaia erecta</i> L.	Nyctaginaceae	Herb	Whole plant	Diuretic
38	<i>Bombax ceiba</i> L	Bombacaceae	Tree	Root	Dysentery
39	<i>Borassus flabellifer</i> L.	Arecaceae	Tree	Fruit	Worms killing
40	<i>Boswellia serrata</i> Roxb.	Burseraceae.	Tree	Bark	Diahhroea
41	<i>Buchanania lanzan</i> Spr.	Anacardeaceae	Tree	Gum	Piles
42	<i>Butea monosperma</i> L.	Fabaceae	Tree	Root	Elephantiasis
43	<i>Butea superba</i> Roxb	Fabaceae	Climber	seed	Antielmintic
44	<i>Calotropis gigantea</i> (L.)R. Br.	Asclepiadiaceae	Shrub	Root	Skin diseas
45	<i>Calotropis procera</i> (Ait), R. Br.	Ascliadiaceae	Shrub	Bark	Dysentery
46	<i>Calycopteris floribunda</i> (Roxb)Lam.	Combretaceae	Shrub	Leaves	Dysentery
47	<i>Cananga odorata</i> (Lam.) Hook	Annonaceae	Tree	Flowers	Skin diseas
48	<i>Canavalia gladiata</i> (Jacq.) DC	Fabaceae	Climber	Roots	Epilepsy
49	<i>Canthium dicoccum</i> Gaertn.	Rubiaceae	Tree	Bark	Fever
50	<i>Canthium parviflorum</i> L.	Rubiaceae	Tree	Stem Bark	Arthritis
51	<i>Canvalia virosa</i> Roxb.	Fabaceae	Climber	Roots	Joint pain
52	<i>Capparis zeylanical</i> L	Capparidaceae	Shrub	Whole plant	Rheumatism
53	<i>Carissa carandas</i> L.	Apocynaceae	Shrub	Fruit	Eye problem
54	<i>Cassia angustifolia</i> Vahl	Leguminosae	Shrub	Leaves	Eye problem
55	<i>Cassia auriculata</i> L.	Leguminosae	Shrub	Bark	Sore throat
56	<i>Cassia fistula</i> L.	Caesalpiniaceae	tree	Bark	Dysentery
57	<i>Celastrus paniculatus</i> Willd.	Celastraceae	Climber	Seed oil	Scabies
58	<i>Celosia argentea</i> L.	Amaranthaceae	Herb	seed	Mouth sores
59	<i>Cepadessa baccifera</i> (Roth) Miq	Meliaceae	Shrub	Leaves	Skin disease
60	<i>Chlorophytum laxum</i> Roxb.	Liliaceae		Roots	Piles
61	<i>Chloxylon swietenia</i> DC.	Flindersiaceae	Tree	Stem bark	Epilepsy

62	<i>Chrozophora prostrata</i> Dalz.	Euphorbiaceae.	Herb	Roots	Cough
63	<i>Cissampelos pareria</i> L.	Menispermaceae	Climber	Roots	Diarrhoea
64	<i>Cissus quadrangularis</i> L.	Vitaceae	Climber	Stem	Bone fracture
65	<i>Cleome gynandra</i> L.	Capparidaceae	Herb	Leaves	Headache
66	<i>Cleome viscosa</i> L.	Cleomaceae	Herb	Leaves	Eye problem
67	<i>Clerodendrum indicum</i> (L). Kanye.	Verbenaceae	Shrub	Roots	Asthma
68	<i>Cocculus hirsutus</i> (L.) Duels	Menispermaceae	Climber	Roots	Rheumatism
69	<i>Cryptolepis buchmani</i> Rome & Schutt.	Asclepidaceae	Climber	Leaves	Rickets
70	<i>Curcuma angustifolia</i> Roxb.	Zingiberaceae	Herb	Roots	Digestive
71	<i>Curcuma pseudomontana</i> Graham.	Zingiberaceae	Herb	Rhizomes	Leprosy
72	<i>Cynodon doctylon</i> L	Poaceae	Herb	Rhizomes	Urinary
73	<i>Cyperus articulatus</i> L.	Cyperaceae	Herb	Root	Hypertension
74	<i>Dalbergia latifolia</i> Roxb	Fabacea	Tree	Leaves	Leprosy
75	<i>Decalepis hamiltonii</i> Wight & Arn.	Asclepidaceae	Climber	Root	Blood purifier
76	<i>Desmodium gangeticum</i> L.	Fabacea	Shrub	Root	Diarrhoea
77	<i>Diplazium esculentum</i> (Retz.) Sw.	Athyriaceae	Herb	Leaves	Cough
78	<i>Eclipta prostrata</i> L.	Asteraceae	Herb	Whole plant	Skin disease
79	<i>Embelia ribes</i> Burm.f	Myrsinaceae	Herb	Root	Cough
80	<i>Embllica officinalis</i> Gaertin	Euphorbiaceae	Tree	Fruit	Laxatives
81	<i>Euphorbia antiquorum</i> L.	Euphorbiaceae	Shrub	Stem	Purgative
82	<i>Euphorbia hitra</i> L.	Euphorbiaceae	Herb	Whole plant	Heart complaint
83	<i>Evolvulus numularis</i> L.	Convolvulaceae	Herb	Whole plant	Memory tonic
84	<i>Ficus bengalensis</i> L.	Moraceae	Tree	Latex	Rheumatism
85	<i>Ficus racemosa</i> L.	Moraceae	Tree	Bark	Wounds
86	<i>Ficus religiosa</i> L.	Moraceae	Tree	Bark	Gonorrhoea
87	<i>Gloriosa superba</i> Linn.	Liliaceae	Herb	Tubers	Stomachache
88	<i>Gmelina asiatica</i> L.	Verbenaceae.	Tree	Fruit	Gonorrhoea
89	<i>Gnetum ula</i> L.	Gnetaceae	Climber	Seeds	Rheumatism
90	<i>Justicia adhatoda</i> L.	Acanthaceae	Shrub	Leaves	Rheumatism
91	<i>Lemonia acidissima</i> L.	Rutaceae	Tree	Gum	Stomachache
92	<i>Litsea deccanensis</i> Gamble	Lauraceae	Tree	Bark	Fever
93	<i>Lygodium microphyllum</i> Cav.	Schizaeaceae	Climber	Leaves	Dysentery
94	<i>Madhuca indica</i> L.	Sapotaceae	Tree	Bark	Ulcers
95	<i>Madhuca longifolia</i> L.	Sapotaceae	Tree	Seeds	Rheumatism
96	<i>Maranta arundinacea</i> L.	Marantaceae	Herb	Rhizomes	Stomachache
97	<i>Marchantia palmata</i> Nees.	Marchantiaceae	Herb	Leaves	wounds
98	<i>Martynia annua</i> L.	Pedaliaceae	Herb	Leaves	Epilepsy
99	<i>Melastoma malabathricum</i> L.	Melastomataceae	Tree	Whole plant	Diarrhoea

100	<i>Melia azadirachta</i> Linn.	Meliaceae	Tree	Flowers	Headache
101	<i>Melothria maderaxpetana</i> L	Cucurbitaceae	Climber	Root	Fever
102	<i>Memecylon umbellatum</i> Burma.	Melastomataceae	Tree	Root	Cynic problem
103	<i>Merremia tridentata</i> (Linn.) Hallier f.	Convolvulaceae	Herb	Whole plant	Rheumatism
104	<i>Mesua ferrea</i> L.	Clusiaceae	Tree	Flowers	Snake Bite
105	<i>Michelia champaca</i> L.	Magnoliaceae	Tree	Flowers	Fever
106	<i>Milletia auriculata</i> Barker	Fabacea	Climber	Root	Snake Bite
107	<i>Mimosa pudica</i> L.	Mimosaceae	Herb	Root	Asthma
108	<i>Mucuna monosperma</i> DC.	Fabacea	Climber	Seeds	Cough
109	<i>Murayya paniculata</i> L.	Rutaceae	Shrub	Fruit	Snake Bite
110	<i>Musa rosacea</i> Jacq.	Musaceae	Shrub	Rhizomes	Dysentery
111	<i>Nerium indicum</i> Mill.	Apocynaceae	Shrub	Leaves	Anticancer
112	<i>Ocimum basilicum</i> L	Lamiaceae	Herb	Whole plant	Fever
113	<i>Ocimum gratissimum</i> L.	Lamiaceae	Shrub	Leaves	Rheumatism
114	<i>Ophiorrhiza mungos</i> Linn.	Rubiaceae	Herb	Root	Snake Bite
115	<i>Opuntia stricta</i> (Haw) Haw.	Cactaceae	Shrub	Fruit	Cough
116	<i>Oroxylom indicum</i> L	Bignoniaceae	Tree	Root	Diarrhoea
117	<i>Ougenia oojinensis</i> Roxb.	Fabaceae	Tree	Bark	Diarrhoea
118	<i>Oxalis corniculatal</i> L.	Oxalidacea.	Herb	Whole plant	Piles
119	<i>Pandanus fascicularis</i> Lam	Araceae	Shrub	Root	Diabetes
120	<i>Phyllanthus amara</i> Schum	Euphorbiaceae	Herb	Whole plant	Jaundice
121	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Tree	Fruit	Liver problem
122	<i>Pittosporum napaulense</i> (DC) Rehder	Pittosporaceae	Tree	Bark	Narcotics
123	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Herb	Root	Fits
124	<i>Portulaca oleracea</i> L.	Portulacaceae	Herb	Leaves	Scurvy
125	<i>Pterocarpus santalinus</i> Linn.	Fabacea	Tree	Bark	Cough
126	<i>Pupalia lappacea</i> L.	Amaranthaceae	Herb	Whole plant	Jaundice
127	<i>Rauwolfia serpentina</i> (L.) Benth	Apocynaceae	Shrub	Root	Blood pressure
128	<i>Saraca asoca</i> (Roxb.) De Wilde	Caesalpiniaceae	Tree	Bark	Menstrual
129	<i>Schleichera oleosa</i> (Lour.) Merr	Sapindaceae	Tree	Root	Snake Bite
130	<i>Scindapsus officinalis</i> (Roxb.) Schott	Araceae	Climber	Inflorescence	Cough
131	<i>Sida cordata</i> (Burma. F.) Borss	Malvaceae	Herb	Leaves	Paralysis
132	<i>Sida cordifolia</i> L.	Malvaceae	Herb	Leaves	Fever
133	<i>Stachy tarpheta urticifolia</i> (Salisb.) Sims	Verbenaceae	Herb	Leaves	wounds
134	<i>Sterculia urens</i> Roxb	Sterculiaceae	Tree	Root	Fertility
135	<i>Strychnos nuxvomica</i> L.	Loganiaceae	Tree	Seed	Snake Bite
136	<i>Strychnos potatorum</i> L	Loganiaceae	Tree	Root	Snake Bite
137	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Tree	Fruit	Asthma

138	<i>Tamarindus indica</i> L.	Caesalpiniaceae	Tree	Seed	Dysentery
139	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Combretaceae	Tree	Bark	Asthma
140	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	Tree	Fruit	Diarrhoea
141	<i>Terminalia chebula</i> Retz.	Combretaceae	Tree	Fruit	Wounds
142	<i>Thalictrum foliolosum</i> DC.	Ranunculaceae	Tree	Root	Eye problem
143	<i>Thespesia lampas</i> (Cav.) Dalzell	Malvaceae	Tree	Root	Typhoid
144	<i>Tiliacora acuminata</i> Lam.	Menispermaceae	Climber	Root	Snake Bite
145	<i>Tinospora cordifolia</i> (Thunb.) Miers	Menispermaceae	Climber	Whole plant	Stomachache
146	<i>Vitex nigundo</i> L.	Verbenaceae	Tree	Leaves	Rheumatism
147	<i>Woodfordia fruticosa</i> L.	Lythraceae	Shrub	Flowers	Dysentery
148	<i>Wrightia arborea</i> (Densst.) Mabb	Apocynaceae	Tree	Bark	Urinary
149	<i>Wrightia tinctoria</i> (Roxb.) R.Br.	Apocynaceae	Tree	Leaves	Stomachache
150	<i>Zingiber capitatum</i> Roxb.	Zingiberaceae	Herb	Rhizomes	Cough

### 3. Results and discussion

The present investigation reveals that a total of 150 species belonging to 123 genera and 65 families were used for various purposes. The family-wise analysis of ethnomedicinal data revealed that of the 65 families the dominant were Fabaceae represented by 10 species followed by Euphorbiaceae with 8 species, Araceae and Apocynaceae with 6 species, Mimosaceae, Combretaceae, Caesalpiniaceae, Amaranthaceae and Acanthaceae with 5 species each, Verbenaceae, Rutaceae, Moraceae, Menispermaceae, Malvaceae and Asclepiadiaceae with 4 species, Zingiberaceae, Rubiaceae, Liliaceae and Asteraceae with 3 species each. Sterculiaceae, Sapotaceae, Oxalidaceae, Nyctaginaceae, Melastomataceae, Loganiaceae, Leguminosae, Lamiaceae, Convolvulaceae, Capparidaceae, Annonaceae and Anacardeaceae with 2 species each and remaining 33 families each one has single species (Table 1). Depending upon the plant part used for medicinal purposes Root constitutes the highest percentage (21.3 %) followed by Leaves (19.33 %), bark (13.33 %), whole plant (12.36 %), fruit (8.0 %), seed (7.33 %), flowers (4.66%), rhizome (4.0%), stem (1.3 %), stem bark (1.33 %), tubers (1.33%) and latex (1.2%). In the present study ethnomedicinal plants were used to cure 60 different ailments. The most common ailments are Rheumatism, Dysentery, Diarrhoea, Cough, Snake Bite, Fever, Stomach ache, Skin diseases, Eye problem etc. The common diseases prevailing in tribal group habitations are ascertained in consultation with local doctors. Similar type of work done by Sudhakar and Vedavathy (16) reported 67 edible plants belonging to 59 genera and 41 families used by the tribals of Chittoor district. Rao and Reddy (17) studied about traditional medicine for the treatment of bone fracture for human beings and cattle with the paste of leaves of *Pupalia lappacea* in Ranga Reddy district. Shanmukha Rao (18) studied about ethnobotany of Pathapatnam Mandal, Srikakulam district. He reported 158 species belonging to 68 genera and 54 families.

### 4. Conclusion

The new generation is not very much interested in the indigenous methods of treating diseases. They are even not very concern about the importance of these herbal plants and its medicinal value. The growing disinterest in the use of the folk medicinal plants and its significance among the younger generation of the primitive tribals will lead to the disappearance of this practice. In the future, it is, therefore, very important to pursue steps that do not deviate from shifting the view of tribal people toward their indigenous belief in the treatment of healing to develop successful drugs or to discover new potential sources of drugs.

### Compliance with ethical standards

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*Disclosure of conflict of interest*

The authors declare that they hold no competing interests.

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