

Ethnomedicinal plants used by Kotia tribes, Pedabayalu Mandalam, Alluri Sitarama Raju District, Andhra Pradesh, India

Balaraju Chandra mouli ¹, Vasa Padmaja ¹, Prema Chandra Sekhar ¹ and B. Padal Salugu ^{2,*}

¹ Department of Botany, SGA Govt. Degree College, Yellamanchili-531055, A.P, India.

² Department of Botany, Andhra University, Visakhapatnam-530003, A.P, India.

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Abstract

An ethnomedicinal survey was carried out in Pedabayalu Mandalam, Alluri Sitaramaraju District, Andhra Pradesh, India. The information was collected on the basis of personal interviews with traditional healers, tribal doctors and old women of the society. The investigation revealed that 69 plant species belonging to 40 families and 60 genera were commonly used in the treatment of 37 ailments.

Keywords: Ethnomedicinal plants; Kotia tribes; Pedabayalu Mandalam; Alluri Sitarama Raju District

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]. 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 [2]. From 1960, Jain started intensive field studies among tribal areas of central India [3-9]. India is inhabited by over 80 million tribals belonging to about 550 tribal communities. Hemadri [10] studied the medicinal wealth of Chittoor district. Rama Rao *et al.* [11] reported 7 unknown or less known medicinal plants which are exclusively used for various ailments by the aborigines. Rama Rao and Henry [12] reported the ethnomedicinal practices of Jatapu and Savara tribal communities of Srikakulam district. Prakasa Rao and Harasreeramulu [13] presented authentic data on 52 selected medicinal plants along with their ethnobotanical uses and distribution in Srikakulam district. It is estimated that about 17,500 angiosperm species alone are occurring in India [14]. Singh *et al.* [15] published 29 medicinal plants which were commonly used by local tribes of Mannanur forest and also studied their biological activity Padal *et al.* [16] reported ethnomedicinal plants used by tribal people of Paderu division, Visakhapatnam district.

2. Material and methods

2.1. Study area

In Pedabayalu Mandalam the tribals Konda Dora, Kotias, Kondus were lived in group of houses called huts. Generally, the houses are constructed with Bamboo (*Bambusa arundinacea*), Palmyra culms and other timber yielding plants. Palmyra culms are used for thatching the roofs of the houses. The walls are constructed with mud mixed with ash of burn grass and are smeared with cow dung. The main occupation of tribal people in Pedabayalu Mandalam is agriculture. Podu cultivation is one of the old methods of cultivation particularly in mountain tracts and hill slopes.

*Corresponding author: B Padal Salugu

2.2. Methodology

The approaches and methodologies for ethnomedicinal work, suggested by Jones [17], Schultes [18], Jain [19] were followed. Emphasis was given mainly on intensive field work in selected tribal habitations. The ethnobotanical information was collected through interviews, discussions and own observations [20-21]. The ethnomedicinal data presented here are the outcome of a series of intensive field studies conducted over a period of 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 69 plant species belonging to 60 genera and 40 families were recorded which are exploited by the tribals for their day to day living. Among the 40 families, the dominant ones are Mimosaceae represented by 6 species followed by Rutaceae, Rubiaceae, Fabaceae and Combretaceae each with 5 species, Zingiberaceae, Rhamnaceae, Menispermaceae, Loganiaceae, Asclepiadaceae, Apocyanaceae, Amaranthaceae and Aizoaceae with 2 species rest of the families each with single species. From the present study it is clearly evident that the local people use trees (39.13%) followed by herbs (23.18%), shrubs and climbers (17.39%), liana and parasites (1.44%). Depending upon the plant part used for medicinal purposes leaf constitutes the highest percentage (26.08%) followed by root (20.28%), stem bark (15.94%), fruit (10.14%), seed (7.24%), stem and rhizome (5.79%), whole plant and root bark (4.34%). Out of 69 plants, for Fever (6 species) followed by Dysentery (5 species), Diabetes and Abortion (4 species), Scabies, Jaundice and Cough (3 species), Skin diseases, Menorrhagia, Intermittent fever, Diarrhea, Cuts and wounds, Cooling effect, Bone fracture, Boils and blisters, Asthama and Aphrodisiac each with (2 species), for curing rest of the diseases each with single species were used by kotia tribes. For instance, bark of *Achyranthes aspera* is used by the people of Gujarat for skin diseases (itching) [22]; root paste of *Cassia fistula* and whole plant extract of *Eclipta prostrata* is used for skin disease by Tribals of Bankura Districts, West Bengal [23]; *Cissampelos pareira* root paste is used by the people of Villupuram district of Tamil Nadu for wound healing and skin disorders [24].

Table 1 Ethnomedicinal plants used by Kotia tribes, Pedabayalu Mandalam, Alluri Sitarama Raju District

S. No	Botanical Name	Family	Habit	Ailment	Parts	Use type
1	<i>Acacia chundra</i>	Mimosaceae	Tree	Boils and blisters	Leaf	Paste
2	<i>Acacia concinna</i>	Mimosaceae	Shrub	Dandruff	Seed	Paste
3	<i>Achyranthes aspera</i>	Amaranthaceae	Herb	Burns	Leaf	Paste
4	<i>Acorus calamus</i>	Araceae	Herb	Fever	Rhizome	Paste
5	<i>Aegle marmelos</i>	Rutaceae	Tree	Cooling effect	Fruit	Paste
6	<i>Aerva lanata</i>	Amaranthaceae	Herb	Abortion	Root	Decoction
7	<i>Albizia amara</i>	Mimosaceae	Tree	Anasarca	Leaf	Paste
8	<i>Albizia lebbek</i>	Mimosaceae	Tree	Viper bite ulcers	Leaf	Paste
9	<i>Alpinia galanga</i>	Zingiberaceae	Herb	Fever	Rhizome	Paste
10	<i>Anogeissus acuminata</i>	Combretaceae	Tree	Dysentery	Stem bark	Decoction
11	<i>Anogeissus latifolia</i>	Combretaceae	Tree	Intermittent fever	Stem bark	Decoction
12	<i>Argemone mexicana</i>	Papaveraceae	Herb	Food poisoning	Seed	Decoction
13	<i>Argyreia nervosa</i>	Convolvulaceae	Climber	Boils and blisters	Leaf	Water
14	<i>Atylosia scarabaeoides</i>	Fabaceae	Climber	Menorrhagia	Root	Paste
15	<i>Azima tetraantha</i>	Salvadoraceae	Shrub	Rheumatism	Root	Paste
16	<i>Bambusa arundinacea</i>	Poaceae	Shrub	Diabetes	Root	Paste
17	<i>Barleria prionitis</i>	Acanthaceae	Shrub	Cuts and wounds	Leaf	Juice
18	<i>Barringtonia acutangula</i>	Barringtoniaceae	Tree	Cough	Fruit	Juice
19	<i>Bauhinia racemosa</i>	Caesalpiniaceae	Tree	Kidney stones	Root bark	Powder

20	<i>Bixa orellana</i>	Bixaceae	Tree	Intermittent fever	Root Bark	Paste
21	<i>Canavalia africana</i>	Fabaceae	Climber	Aphrodisiac	Fruit	Juice
22	<i>Canavalia gladiata</i>	Fabaceae	Climber	Fever	Seed	Powder
23	<i>Caralluma umbellata</i>	Asclepiadaceae	Herb	Scabies	Stem	Paste
24	<i>Cardiospermum halicacabum</i>	Sapindaceae	Climber	Menstrual disorder	Root	Paste
25	<i>Carissa carandas</i>	Apocyanaceae	Shrub	Dysentery	Fruit	Paste
26	<i>Cassyth afilliformis</i>	Lauraceae	Climber	Leucorrhoea	Stem	Juice
27	<i>Catunaregam spinosa</i>	Rubiaceae	Tree	Abortion	Stem bark	Paste
28	<i>Celastrus paniculatus</i>	Celastraceae	Climber	Abortion	Stem bark	Paste
29	<i>Centella asiatica</i>	Apiaceae	Herb	Blood purification	Leaf	Decoction
30	<i>Cocculus hirsutus</i>	Menispermaceae	Climber	Diabetes	Leaf	Paste
31	<i>Coldenia procumbens</i>	Boraginaceae	Herb	Cuts and wounds	Whole Plant	Powder
32	<i>Commiphora caudata</i>	Burseraceae	Tree	Asthma	Whole Plant	Decoction
33	<i>Decalepis hamiltonii</i>	Asclepiadaceae	Climber	Bronchitis	Root	Juice
34	<i>Dendrophthoe falcata</i>	Loranthaceae	Parasite	Menstrual pain	Root	Decoction
35	<i>Dichrostachys cinerea</i>	Mimosaceae	Shrub	Skin diseases	Leaf	Paste
36	<i>Entada rheedii</i>	Mimosaceae	Liane	Helminthiasis	Seed	Powder
37	<i>Erythroxylum monogynum</i>	Erythroxylaceae	Shrub	Jaundice	Leaf	Juice
38	<i>Ficus religiosa</i>	Moraceae	Tree	Bed sores	Stem bark	Paste
39	<i>Gloriosa superba</i>	Liliaceae	Herb	Abortion	Root	Paste
40	<i>Glycosmis mauritiana</i>	Rutaceae	Shrub	Fever	Root	Decoction
41	<i>Mitragyna parviflora</i>	Rubiaceae	Tree	Jaundice	Leaf	Juice
42	<i>Morinda pubescens</i>	Rubiaceae	Tree	Fever	Root	Powder
43	<i>Mucuna pruriens</i>	Fabaceae	Climber	Aphrodisiac	Seed	Paste
44	<i>Murraya koenigii</i>	Rutaceae	Shrub	Diarrhea	Leaf	Juice
45	<i>Musa rosacea</i>	Musaceae	Herb	Dysentery	Rhizome	Juice
46	<i>Naringi crenulata</i>	Rutaceae	Tree	Dysentery	Stem bark	Decoction
47	<i>Neolamarkia cadamba</i>	Rubiaceae	Tree	Cough	Stem bark	Juice
48	<i>Opuntia dillenii</i>	Cactaceae		Cough	Stem	Latex
49	<i>Oroxylum indicum</i>	Bignoniaceae	Tree	Epilepsy	Stem bark	Decoction
50	<i>Pachygone ovata</i>	Menispermaceae	Climber	Diarrhoea	Root	Decoction
51	<i>Pandanus odoratissimus</i>	Pandanaceae	Shrub	skin diseases	Leaf	Paste
52	<i>Pavetta indica</i>	Rubiaceae	Tree	Ulcers	Leaf	Paste
53	<i>Strychnos nux-vomica</i>	Loganiaceae	Tree	Scabies	Root bark	Paste
54	<i>Strychnos potatorum</i>	Loganiaceae	Tree	Asthama	Stem	Devotion
55	<i>Syzygium cumini</i>	Myrtaceae	Tree	Diabetes	Fruit	Powder
56	<i>Tephrosia villosa</i>	Fabaceae	Herb	Caries of teeth	Root	Paste
57	<i>Terminalia alata</i>	Combretaceae	Tree	Dysentery	Stem bark	Powder

58	<i>Terminalia arjuna</i>	Combretaceae	Tree	Diabetes	Stem bark	Paste
59	<i>Terminalia bellerica</i>	Combretaceae	Tree	Antiemetics	Stem bark	Paste
60	<i>Trianthema decandra</i>	Aizoaceae	Herb	Jaundice	Leaf	Paste
61	<i>Trianthema portulacastrum</i>	Aizoaceae	Herb	Bone fracture	Leaf	Paste
62	<i>Tribulus terrestris</i>	Zygophyllaceae	Herb	Stomach pain	Root	Juice
63	<i>Trichosanthes dioica</i>	Cucurbitaceae	Climber	Cough and Fever	Fruit	Paste
64	<i>Vanda tessellata</i>	Orchidaceae	Herb	Bone fracture	Whole Plant	Paste
65	<i>Wrightia tinctoria</i>	Apocynaceae	Tree	Psoriasis	Leaf	Paste
66	<i>Zanthoxylum armatum</i>	Rutaceae	Tree	Scabies	Leaf	Paste
67	<i>Zingiber zerumbet</i>	Zingiberaceae	Herb	Fever	Rhizome	Paste
68	<i>Zizyphus mauritiana</i>	Rhamnaceae	Tree	Cooling effect	Fruit	Paste
69	<i>Zizyphus enoplia</i>	Rhamnaceae	Shrub	Blisters	Root	Paste

4. Conclusion

The popular use of herbal remedies among the tribal people of Alluri Sitaramaraju district reflects the revival of interest in traditional medicine. The scientific validation of these remedies may help in discovering new drugs from the plant species. The information on therapeutic uses of plants may provide a great potential for discovering of new drugs and promoting awareness among the people to use them as remedy in health care system.

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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