

Ethnomedicine of Primitive Khonds tribe, Visakhapatnam District, Andhra Pradesh, India

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ABSTRACT

An ethnomedicinal survey was carried out in Paderu division, Visakhapatnam District, Andhra Pradesh, India. For documentation of important ethnomedicinal plants and information from local community about their medicinal uses. The traditional knowledge of primitive khond tribe traditional uses was 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 68 plants species belong to 56 genera and 42 families were identified by taxonomic description and locally by ethnomedicinal knowledge of people existing in the region.

Key words: *Traditional practice, Khond primitive tribal communities, Ethnomedicinal plants, Paderu division, Visakhapatnam district.*

Introduction

India has a century's old tradition of using medicinal plants and herbal medicines for the alleviation of various diseases and ailments, as well as for the promotion of health and happiness. Majumdar (1927) has done scrutiny of literature of Indian medicine. Kirtikar and Basu (1935 and 1975) and Chopra *et al.* (1956, 1958, 1969) published well established documents on Indian medicinal plants, which were worthy of reference till today. Janaki Ammal (1954) stressed the need for seeking the help of the aboriginals in the tribal regions of Assam, the Himalayas, Andaman and Nicobar Islands and the Western Ghats for ethnobotanical findings. This plant based traditional knowledge has become a recognised tool in search for new sources of drugs and Neutraceuticals (Sharma and Mujumdar, 2003). Some work on medicinal plants in relation to their

utilization and conservation has been conducted in many parts of India (Padhye *et al.*, 1992; Bhogaonkar and Devarkar, 2002; Chaudhari and Hutke, 2002 and Khumbangmayum *et al.*, 2005). Ethnomedicinal plants are generally used for curing various ailments like diabetes, dysentery, typhoid, and jaundice. Different parts of the plant, including roots, leaves, fruits, and flowers, are used for the treatment of jaundice. Furthermore, jaundice is not just a disease rather a sign of a disease that occurs in the liver, which indicates impairment of the liver functioning (Abbasi *et al.*, 2009; Janghel *et al.*, 2019).

Materials and Methods

Study area

Paderu Division of Visakhapatnam District, Andhra Pradesh, is the higher altitude zone in the hilly tracts

of Eastern Ghats of Andhra Pradesh. It has the second highest tribal population in Andhra Pradesh. It lies in between latitudes of 17° - $50'$ and 18° - $35'$ north and longitude of 82° - $17'$ and 83° - $1'$ East with a total geographical area of 3, 24,965 ha (Figure 1). Khonds are chiefly residing in the densely wooded hill slopes in the schedules areas of Visakhapatnam districts of Andhra Pradesh. They are also known as Samantha, Konda Kodu, Jatapu, Jatapu Dora, Kodi, Kodu, Kondu and Kuinga. These terms are used for Khonds in different areas of Paderu Division, Visakhapatnam districts. The Khonds mainly subsist on cultivation. They are experts in Podu cultivation. They grow millets like Ragi, Sama and Korra and Oil seeds like niger, castor and pulses like red gram in podu fields.

Methodology

Information on the use of medicinal plants was collected during year 2021 - 2022 through field surveys in different interior villages of the Paderu Division, Visakhapatnam district. The questionnaires were devised to identify the indigenous knowledge of plant-based remedies from primitive khondu people. Information was gathered through semi-structured interviews that were held with selected knowledgeable men and women khondu tribes. At the end of each interview, the plant specimens were

collected, dried by using routine botanical collection and herbarium techniques, identified and preserved (Jain and Rao, 1977). The representative taxa were collected and identified with the help of floras (Pullaiah and Ramamurthy, 2002; Pullaiah *et al.*, 2007) and made into herbarium. The voucher specimens were housed in the Botany Department Herbarium (BDH), Department of Botany, Andhra University, Visakhapatnam.

Results and Discussion

During exploration trips, medicinally useful information have been recorded on 68 plant species belonging to 56 genera and 42 families were recorded which are exploited by the Khond tribes for their healthcare. The family wise analysis of ethnomedicinal data revealed that out of 42 families the dominant ones are Fabaceae represented by 6 species followed by Apocyanaceae 5 species, Vitaceae, Mimosaceae, Menispermaceae, Malvaceae and Discoreaceae with 3 species each, Sapotaceae, Ebenaceae, Caesalpiniaceae, Asteraceae, and Anacardiaceae with 2 species each, remaining 30 families were single species. From the present study it is clearly evident that the local people used trees (28), followed by shrubs (17) climbers (14) and herbs (9) (Table. 1). Depending upon the plant part used for medicinal purposes leaf constitutes the highest

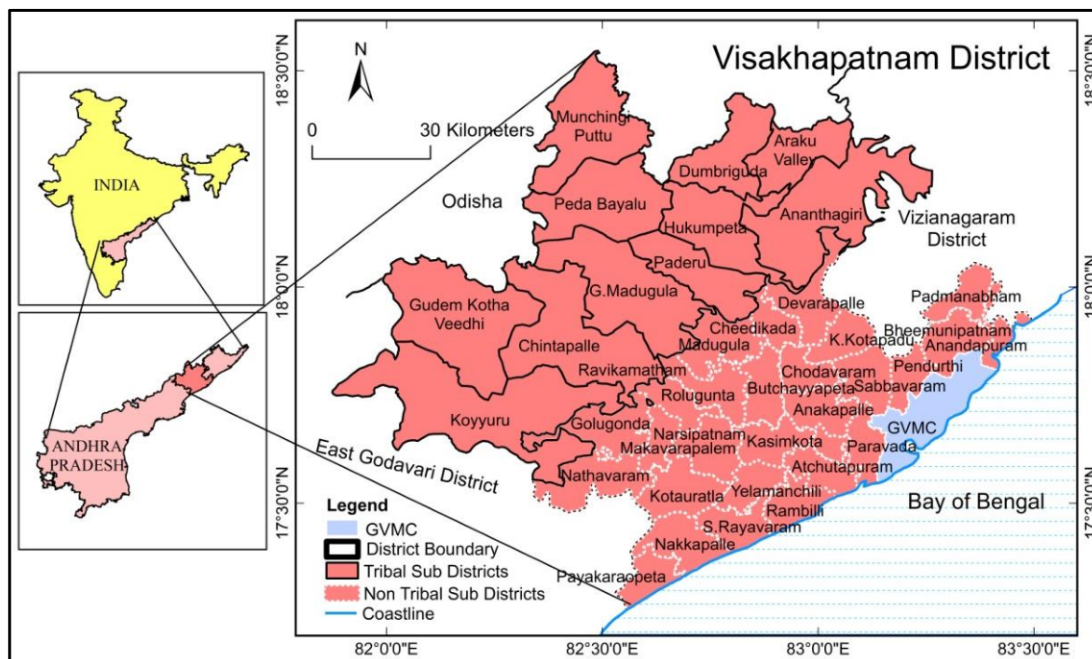


Fig. 1. Study area Map. (Paderu division, Visakhapatnam District)

Table 1. Traditional medicinal plants used by Khondu tribes, Paderu Division, Visakhapatnam District.

S.No	Botanical Name	Family	Habit	Ailment	Parts	Uses
1	<i>Abrus precatorius</i>	Fabaceae	Climber	Abortion	Root	Decoction
2	<i>Abutilon indicum</i>	Malvaceae	Shrub	Dysentery	Leaf	Paste
3	<i>Acacia leucophloea</i>	Mimosaceae	Tree	Tooth ache	Stem bark	Decoction
4	<i>Acacia nilotica</i>	Mimosaceae	Tree	Wounds	Stem bark	Paste
				Diarrhoea	Stem bark	Decoction
				Leucoderma	Leaf	Paste
5	<i>Acacia torta</i>	Mimosaceae	Shrub	Leucorrhoea	Gum	Paste
				Whooping cough	Root Bark	Paste
6	<i>Agave cantala</i>	Agavacaceae	Shrub	Wounds	Stem bark	Paste
				Bruises	Leaf	Juice
7	<i>Ailanthus excelsa</i>	Simaroubaceae	Tree	Purgatives	Leaf	paste
				Dysentery in poultry	Stem bark	Powder
8	<i>Alangium salviifolium</i>	Alangiaceae	Shrub	Epilepsy	Stem bark	Powder
				Bone fracture	Root	Paste
				Constipation	Root Bark	Powder
9	<i>Alstonia scholaris</i>	Apocyanaceae	Tree	Fever	Root	Decoction
				Malaria	Stem bark	Decoction
10	<i>Alstonia venenata</i>	Apocyanaceae	Tree	Anthelmintic	Stem bark	Decoction
				Stomach pain	Stem bark	Paste
11	<i>Ampelocissus latifolia</i>	Vitaceae	Climber	Syphilis	Fruit	Paste
				Boils and Wounds	Leaf	Paste
				Ringworm	Root	Paste
12	<i>Anamirta cocculus</i>	Menispermaceae	Climber	Contraction of uterus	Leaf	Paste
13	<i>Andrographis paniculata</i>	Acanthaceae	Herb	Boils and Blisters	Leaf	Paste
				Cholera	Leaf	Paste
				Diarrhoea	Leaf	Paste
14	<i>Aristolochia bracteolata</i>	Artistolochiaceae	Herb	Eczema	Leaf	Juice
				Cuts and wounds	Leaf	Paste
				Leucorrhoea	Stem	Juice
				Snake bite	Leaf	Paste
15	<i>Asparagus recemosus</i>	Asparagaceae	Climber	Bronchitis	Root	Paste
				Diabetes	Root	Powder
				Tumours	Root	Powder
				Wounds	Root	Paste
16	<i>Atalantia monophylla</i>	Rutaceae	Shrub	Rheumatoid	Fruit	Juice
				Scabies	Root Bark	Paste
17	<i>Blumea axillaris</i>	Asteraceae	Herb	Cooling effect	Leaf	Paste
				Jaundice	Leaf	Juice
				Skin diseases	Leaf	Paste
18	<i>Bombax ceiba</i>	Bombacaceae	Tree	Boils and Sores	Flower	Paste
				Pimples and complexion	Stem	Paste
19	<i>Boswellia serrata</i>	Bursaceae	Tree	Insect repellent	Stem	Powder
				Scrofula	Stem bark	Paste
				Diarrhoea	Stem bark	Paste
				Chronic ulcers	Resin	Paste
20	<i>Butea monosperma</i>	Fabaceae	Tree	Abdominal disorders	Stem	Powder
				Backache	Flower	Paste
				Menorrhagia	Stem bark	Paste
21	<i>Caesalpinia bonduc</i>	Caesalpiniaceae	Shrub	Epilepsy	Root Bark	Pills
				Abortion	Seeds	Powder
22	<i>Careya arborea</i>	Lecythidaceae	Tree	Body swelling	Bark	Paste
23	<i>Caryota urens</i>	Arecaceae	Tree	Dyspepsia	Infloroscenece	Sap
				Tympanites	Leaf	Powder

Table 1. Continued ...

S.No	Botanical Name	Family	Habit	Ailment	Parts	Uses
24	<i>Senna auriculata</i>	Caesalpiniaceae	Shrub	Diabetic ulcers Burns Bone fracture	Whole Plant Leaf Leaf	Powder Powder Paste
25	<i>Cissus quadrangularis</i>	Vitaceae	Climber	Loss of appetite	Stem	Powder
26	<i>Cissus vitiginea</i>	Vitaceae	Climber	Scabies	Leaf	Paste
27	<i>Cleistanthus collinus</i>	Euphorbiaceae	Tree	Insect repellent Rheumatoid arthritis	Leaf Root Bark	Powder Paste
28	<i>Cleome viscosa</i>	Cleomaceae	Herb	Cuts and Wounds Earache Toothache	Leaf Leaf Leaf	Paste Juice Juice
29	<i>Rothea serrata</i>	Verbenaceae	Shrub	Asthma Insect repellent	Root Leaf	Decoction Powder
30	<i>Clitoria ternatea</i>	Fabaceae	Climber	Antiemetics Brain tonic	Root Seed	Juice Powder
31	<i>Crotalaria retusa</i>	Fabaceae	Shrub	Ckicken pox	Root	Paste
32	<i>Crotalaria verrucosa</i>	Fabaceae	Shrub	Scabies Scorpoin sting Snake bite	Leaf Root Root	Paste Paste Paste
33	<i>Curculigo orchioides</i>	Hypoxidaceae	Herb	Jaundice Ophthalmic diseases	Rhizome Rhizome	Decoction Paste
34	<i>Curcuma pseudomontana</i>	Zingiberaceae	Herb	Anasarca Cooling effect	Rhizome Rhizome	Paste Decoction
35	<i>Dalbergia latifolia</i>	Fabaceae	Tree	skin diseases Oedema	Stem bark Root bark	Paste Juice
36	<i>Dioscorea bulbifera</i>	Dioscoreaceae	Climber	Dyspepsia Centipede bite	Leaf Root	Juice Paste
37	<i>Dioscorea oppositifolia</i>	Dioscoreaceae	Climber	Cuts and Wounds	Leaf	Paste
38	<i>Dioscorea pentaphylla</i>	Discoreaceae	Climber	Insecticide Rheumatism	Tuber Tuber	Powder Paste
39	<i>Diospyros melanoxylon</i>	Ebenaceae	Tree	Joint pains	Stem bark	Paste
40	<i>Diospyros sylvatica</i>	Ebenaceae	Tree	Fits	Stem bark	Paste
41	<i>Dodonaea viscosa</i>	Sapindaceae	Shrub	Muscle pain Epilepsy	Stem bark Leaf	Decoction Juice
42	<i>Ehretia microphylla</i>	Boraginaceae	Shrub	Ulcers and Wounds Debilis and syphilis	Stem bark Root	Powder Paste
43	<i>Hymenodictyon orixense</i>	Rubiaceae	Tree	Cuts and wounds	Stem	Paste
44	<i>Ichmocarpus frutescens</i>	Apocynaceae	Shrub	Hemorrhagic	Root	Paste
45	<i>Kalanchoe laciniata</i>	Crassulaceae	Herb	Bone Fracture Carbuncle	Leaf Leaf	Paste Paste
46	<i>Leonotis nepetiifolia</i>	Lamiaceae	Shrub	Skin diseases	Whole Plant	Paste
47	<i>Litsea deccanensis</i>	Lauraceae	Tree	Boils Body pains	Stem bark Stem bark	Paste Paste
48	<i>Litsea glutinosa</i>	Lauraceae	Tree	Cuts Paralysis Snake bite	Bark Stem bark Stem bark	Paste Powder Paste
49	<i>Madhuca longifolia</i>	Sapotaceae	Tree	Stomach pains	Root	Paste
50	<i>Manilkara hexandra</i>	Sapotaceae	Tree	Eyesight	Root	Paste
51	<i>Semecarpus anacardium</i>	Anacardiaceae	Tree	Menstrual disorders	Fruit	Paste
52	<i>Sida acuta</i>	Malvaceae	Herb	Nervous weakness	Whole Plant	Powder

Table 1. Continued ...

S.No	Botanical Name	Family	Habit	Ailment	Parts	Uses
53	<i>Sida cordata</i>	Malvaceae	Shrub	Paralysis Dysentery	Leaf Whole Plant	Juice Paste
54	<i>Smilax zeylanica</i>	Smilacaceae	Climber	Paralysis	Tuber	Paste
55	<i>Solanum anguivi</i>	Solanaceae	Shrub	Pains Scabies Tooth ache	Leaf Seed Seed	Paste Paste Paste
56	<i>Soymida febrifuga</i>	Meliaceae	Tree	Menstrual disorders	Stem bark	Decoction
57	<i>Sphaeranthus indicus</i>	Asteraceae	Herb	Impotency Gastric trouble	Root Flower	Powder Paste
58	<i>Spondias pinnata</i>	Anacardiaceae	Tree	Dysentery	Stem bark	Decoction
59	<i>Stemona tuberosa</i>	Stemonaceae	Climber	Dysentery Fever	Root Tuber	Paste Paste
60	<i>Sterculia urens</i>	Sterculiaceae	Tree	Rheumatic pains	Stem bark	Paste
61	<i>Terminalia chebula</i>	Combretaceae	Tree	Cough Dysentery	Fruit Fruit	Powder Devotion
62	<i>Thespesia populnea</i>	Malvaceae	Tree	Skin diseases Dysentery	Leaf Stem bark	Paste Devotion
63	<i>Tiliacora acuminata</i>	Menispermaceae	Climber	Snake bite Cough	Root Leaf	Paste Paste
64	<i>Tinospora cordifolia</i>	Menispermaceae	Climber	Bone fracture Cancer Cuts	Stem Root Stem	Paste Paste Paste
65	<i>Woodfordia fruticosa</i>	Lythraceae	Shrub	Leprosy	Stem bark	Paste
66	<i>Wrightia arborea</i>	Apocynaceae	Tree	Snake bite	Latex	Milk
67	<i>Wrightia tinctoria</i>	Apocynaceae	Tree	Psoriasis	Leaf	Paste
68	<i>Xylia xylocarpa</i>	Mimosaceae	Tree	Gonorrhoea	Root bark	Paste

percentage (35) followed by stem bark (26), root (22), stem (8), Root bark (7), fruit (5), whole plant, tuber, seed and rhizome (4) each one, flower (3) and bark (2), remaining were single species. Intensive survey and repeated personal interviews in different pockets resulted in coming across 76 diseases in the area. A total of 70 species reported in the present study are used in curing 76 different ailments are Abdominal disorders (1), abortion (2), Anasarca (1), anthelmintic (1), antiemetic (1), asthma (1), Backache (1), Body pains (1), Body swelling (1), Boils and Blisters (3), Boils and Sores (1), Boils and Wounds (1), Bone fracture (4), Brain tonic (1), Bronchitis (1), Bruises (1), Burns (1), Cancer (1), Carbuncle (1), Centipede bite (1), Cholera (1), Chronic ulcers (1), Chicken pox (1), Constipation (1), Contraction of uterus (1), Cooling effect (2), Cough (2), Cuts (2), Cuts and wounds (4), Debilis and syphilis (1), Diabetes (3), Diarrhoea (3), Dysentery (8), Dyspepsia (1), Earache (1), Eczema (1), Epilepsy (3), Eyesight (1), Fever (2), Fits (1), Gastric trouble (1), Gonorrhoea (1), Hemorrhage (1), Impotency (1), Insect repellent (4), Jaundice (2), Joint pains (1), Leprosy (1), Leucoderma (10), Loss of appetite (1), Malaria (1), Menstrual disorders (3),

Muscle pain (1), Nervous weakness (1), Oedema (1), Ophthalmic diseases (1), Pains (1), Paralysis (1), Pimples and complexion (1) Psoriasis (1), Purgatives (1), Rheumatism (3), Ringworm (1), Scabies (2), Scorpion sting (1), Scrofula (1), Skin diseases (4), Snake bite (5), Stomach pain (2), Syphilis (1), Tooth ache (3), Tumours (1), Tympanites (1), Ulcers and Wounds (3), Whooping cough (1) and Wounds (3). The most commonly treated disease was dysentery 8 plants were used by local Khondu tribal people of Paderu Division, Visakhapatnam District.

Among the different plant parts, the leaves (35) are the most frequently used for the treatment of diseases followed by stem bark (26), root (22), stem (8), root bark (7), fruit (5), whole plant, tuber, seed and rhizome with (4), flower (3), bark (2) and gum, inflorescence, latex and resin were consist single (1) species. There is no standardized measure on the dose for most of the ethnomedicines in the study area. The dose depends on the traditional healer that prepares the herbs for medicinal purpose or it may also depend upon the disease severity (Sakina Mussarat *et al.*, 2014). Mode of preparation and uses of plants mostly form of Paste (80, 67%) followed by

powder (22, 18%), decoction (12, 10%), juice, milk, paste, pills and sap were combined (5, 4%). Most of the ethnomedicines are prepared using single plant in the region while some others are prepared by the mixing parts of more than one plant. Sudhakar and Vedavathy (1999) reported 67 edible plants belonging to 59 genera and 41 families used by the tribals of Chittoor district. Rao and Reddy (Rao and Reddy 1999) 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 (2004) studied about ethnobotany of Pathapatnam Mandal, Srikakulam district. He reported 158 species belonging to 68 genera and 54 families.

Conclusion

The ethnomedicinal plants demonstrated the presence of several phytochemicals in them and displayed phenolic and flavonoid compounds with hepatoprotective properties in most of the experimental studies performed with these plants. Nevertheless, very few studies are carried out on the scientific validation of medicinal plants by means of biochemical, clinical, and pharmacological screening to validate the healing folklore medicine. 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.

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