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(RESEARCH ARTICLE)

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Ethnomedicinal plants used by Primitive Nuka Dora Tribes Paderu Division Alluri Sitaramaraju District, Andhra Pradesh, India

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Abstract

An ethnomedicinal survey was carried out among the ethnic group of Nuka Dora tribes inhabited in Paderu division, Alluri Sitarama Raju District, Andhra Pradesh during 2021-2022. A total of 98 plant species belonging to 88 genera and 35 families. All the plants need to be evaluated through phytochemical investigations to discover their potentiality as drugs. The study shows a high degree novelty in the use of plants among the tribal people reflecting the revival of interest in traditional medicine.

Keywords: Ethnomedicine; Nuka Dora tribes; Paderu division; Alluri Sitaramraju District; Andhra Pradesh

1. Introduction

Since the beginning of civilization, people have used plants as medicine. Ethnobotanical study of traditional plant wealth has resulted in many valuable discoveries. A discussion of human life on this planet would not be complete without a look at the role of plants. Ayurveda, the indigenous system of medicine in India, dates back to Vedic ages (1500-800 BC). It has been an integral part of Indian culture [2].It is not only a science of treatment of illness but covers the whole gamut of happy human life involving the physical, meta-physical and spiritual aspects [3]. Ethnobotanical investigations have led to the documentation of a large number of wild plants used by tribals for meeting their multifarious requirements [4]. Some recent notable contribution on ethnomedicine of north coastal Andhra Pradesh [5-10]. The objectives of the present research are collection, identification and documentation of the plants used by Nuka Dora tribal community, an extensive exploration studies in the area to record firsthand information from the Nuka Dora tribal practitioners.

2. Material and methods

2.1. Study area

The study area includes the Paderu Division of Alluri Sitaramaraju District, Andhra Pradesh. Paderu Division 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. Paderu division lies in between latitudes of 17^{o}-50^{1} and 18^{o} – 35^{1} north and longitude of 82^{o}-17^{1} and 83^{o}-1^{1} East with a total geographical area of 3, 24,965 Ha. The area receives an average annual rainfall of 1800 mm and support a rich diversity of plant wealth. Nukha Doras are found in the tribal areas of Alluri Sitaramaraju districts, Nukha Dora also known as “Mukha Dora”, ‘Racha Reddy’, ‘Muka Raju’ and ‘Sabarlu’. Nukha Dora is divided into several exogamous clans such as Korra, Gammela, Kakara, Sugra, Kinchoyi, etc.The name of the clan is prefixed to their names. The elders of Nukha Dora community wear sacred thresad and Tulasi beads.

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2.2. Methodology

Intensive field surveys were carried out during 2021–2022, covering all the seasons. Collected specimens were made into herbarium as per the methods suggested by Jain & Rao [20]. The focus of the present study is to record the ethnobotanical knowledge with special reference to medicinal plants possessed by the tribal people. They represent the pockets of human gene pool and have distinct habitats and habits with ample knowledge on the medicinal properties of their surrounding plants. The representative taxa were collected and identified with the help of floras [21-23] and made into herbarium. The voucher specimens were housed in the Botany Department Herbarium (BDH), Department of Botany, Andhra University, and Visakhapatnam.

3. Results and discussion

During exploration trips, medicinally useful information have been recorded on 98 plant species belonging to 88 genera and 35 families were recorded which are exploited by the Nuka tribals for their healthcare. The family wise analysis of ethnomedicinal data revealed that of the 35 families the dominant ones are Euphorbiaceae represented by 6 species followed by Fabaceae, Asclepiadaceae, Lamiaceae and Rutaceae with 4 species, Zingiberaceae, Moraceae, Lythraceae, Liliaceae, Combretaceae and Asteraceae with 3 species each, From the present study it is clearly evident that the local people used herbs (34), followed by trees (32) climbers (16), shrubs (15) and parasites (2), (Table. 1). These 98 plants were used to cure varies aliments, i.e., Irregular menses, Urinary problems, Diarrhoea, Dysentery, Scorpion stung, Centipede bite, Diabetes, Fever, Jaundice, Burns, Cough, Cold, Dandruff, Wounds, Ophthalmic, Ulcers, Bone fracture, Abdominal pain, Night blindness, Toothache, Piles, Muscular pain, Rheumatic pain, Body swellings and arthritis. Sudhakar and Vedavathy [24] reported 67 edible plants belonging to 59 genera and 41 families used by the tribals of Chittoor district. Rao and Reddy [25] 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 [26] studied about ethnobotany of Pathapatnam Mandal, Srikakulam district.

Table 1 Ethnomedicinal plants used by primitive Nuka Dora tribes, Paderu Division, Alluri Sitaramaraju District

Sr.No	Botanical Name	Common name	Habit	Parts	Disease
1	*Achyranthes aspera* L.	Uttareni	Herb	Seed	Mental disorders
2	*Acorus calamus* L.	Vasa	Herb	Rhizome	Cold
3	*Adiantum lunulatum* Burm. f.	Gatumandu	Herb	Leaf	Abortion
4	*Adina cordifolia* (Roxb.) Hook. f.	Kambachettu	Tree	Stem bark	Leucorrhoea
5	*Aerva lanata* (L.) Juss.	Pindikura	Herb	Root	Headache
6	*Alangium salviifolium* (L.f.) Wangerin	Uduga	Tree	Leaf	Rheumatism
7	*Alstonia venenata* R.Br.	Edakulapala	Shrub	Stem bark	Anthelmintic
8	*Amaranthus spinosus* L.	Mullathotakura	Herb	Root	Dyspepsia
9	*Amorphophallus paeoniifolius* (Dennst.)	Adavikandha	Herb	Corm	Bone fracture
10	*Andrographis paniculata* (Burm.f.) Nees	Nelavemu	Herb	Stem	Asthma
11	*Annona squamosa* L.	Sitapalam	Tree	Root	Abortion
12	*Arisaema tortuosum* (Wall.) Schott	Dhamma saaru	Herb	Tuber	Headache
13	*Aristolochia indica* L.	Gadidagadapaku	Climber	Root	Diarrhoea
14	*Azadirachta indica* A.Juss.	Vepa	Tree	Leaf	Allergy
15	*Barringtonia acutangula* (L.) Gaertn.	Kadapa Chettu	Tree	Leaf	Headache
16	*Bauhinia racemosa* Lam.	Arichettu	Tree	Stem bark	Asthma
17	*Bauhinia vahlii* Wight & Arn.	Addaku	Climber	Root	Dysentry
18	*Bombax ceiba* L.	Buruga	Tree	Leaf	Leucorrhoea
19	*Buchanania lanzan* Spreng.	Sarepappu	Tree	Stem bark	Boils

20	*Caesalpinia bonduc* (L.) Roxb.	Gachakaya	Shrub	Seed	Abortion
21	*Calotropis gigantea* (L.) Dryand.	Jilledu	Shrub	Root	Stomach pain
22	*Capparis zeylanica* L.	Aridonda	Shrub	Root bark	Earache
23	*Caryota urens* L.	Jeeluga	Tree	Inflorescence	Aphrodisiac
24	*Cassia absus* L.	Chanupala vittulu	Herb	flower	Asthma
25	*Cassia alata* L.	Tamaramokka	Herb	flower	Asthma
26	*Cassia occidentalis* L.	Kasinta	Herb	Root	Anthelmintic
27	*Cassytha filiformis* L.	Savaralu	Parasite	Whole plant	Hydrocele
28	*Centella asiatica* (L.) Urb.	Saraswathi Aku	Herb	Leaf	Anaemia
29	*Coldenia procumbens* L.	Hamsapadu	Herb	Whole plant	Cuts
30	*Cryptolepis buchananii* Roem. & Schult.	Palabaddu	Climber	Root	Diarrhoea
31	*Dalbergia latifolia* Roxb.	Iridi	Tree	Stem bark	Fever
32	*Datura stramonium* L	Ummeta	Shrub	Root	Asthma
33	*Desmodium gangeticum* (L.) DC.	Seetammajada	Herb	Leaf	Acidity
34	*Dioscorea bulbifera* L.	Chedhadumpa	Climber	Root	Sterility
35	*Diospyros chloroxylon* Roxb.	Bheedi	Tree	Leaf	Diarrhoea
36	*Diospyros melanoxylon* Roxb.	Thumiki	Tree	Stem bark	Cold
37	*Eclipta prostrata* (L.) L.	Guntagalagaraku	Herb	Whole plant	Acidity
38	*Elephantopus scaber* L.	Nelamarri	Herb	Root	Anthelmintic
39	*Elytraria acaulis* (L.f.) Lindau	Kukkapan	Herb	Root	Anasarca
40	*Erythrina suberosa* Roxb.	Mulla moduga	Tree	Root	Dysentry
41	*Euphorbia hirta* L.	Pachabottlu	Herb	Leaf	Dysentry
42	*Ficus benghalensis* L.	Marri	Tree	Leaf	Boils
43	*Ficus racemosa* L.	Juvvi	Tree	Stem bark	Diarrhoea
44	*Garuga pinnata* Roxb.	Kambha	Tree	Stem bark	Stomach pain
45	*Gymnema sylvestre* (Retz.) R.Br. ex Sm.	Podapatri	Climber	Root	Cobrabite
46	*Helicteres isora* L.	Chamalanara	Shrub	Fruit	Dysentry
47	*Hemidesmus indicus* (L.) R. Br. ex Schult.	Sugandhipala	Climber	Root	Diarrhoea
48	*Hemionitis arifolia* (Burm. f.) T. Moore	Ramabanam	Herb	Plant	Digestive tonic
49	*Holarrhena pubescens* Wall. ex G.Don	Palakodisa	Shrub	Bark	Asthma
50	*Ichnocarpus frutescens* (L.) W.T.Aiton	Palateega	Climber	Root	Epilipsy
51	*Ixora pavetta* Andr.	Ramabanam	Shrub	Stem bark	Jaundice
52	*Jatropha curcas* L.	Nepalam	Shrub	Latex	Burns
53	*Justicia adhatoda* L.	Addasaramu	Shrub	Leaf	Cough
54	*Leonotis leonurus* (L.) R.Br.	Ranabheri	Herb	Inflorescence	Breast pain
55	*Litsea glutinosa* (Lour.) C.B.Rob.	Naramamidi	Tree	Stem bark	Rheumatism
56	*Mallotus philippensis* (Lam.) Müll.Arg.	Sindhuram	Tree	fruit	Anthelmintic
57	*Mangifera indica* L.	Mamidi	Tree	Gum	Boils

58	*Mimosa pudica* L.	Nidraganneru	Herb	Root	Epilipsy
59	*Mucuna acuminata* Baker	Dhulagondi	Climber	Root	Dysmenorrhoea
60	*Naravelia zeylanica* (L.) DC.	Pullabatchala	Climber	Leaf	Cold
61	*Ocimum basilicum* L.	Thulasi	Herb	Seed	Diarrhoea
62	*Ocimum tenuiflorum* L.	Krishna Tulasi	Herb	Leaf	Conjunctivitis
63	*Oroxylum indicum* (L.) Kurz	Pampinacettu	Tree	Root bark	Antifertility
64	*Orthosiphon rubicundus* (D.Don) Benth.	Nela tappidi	Herb	Root	Diarrhoea
65	*Pavetta indica* L.	Papidi	Shrub	Leaf	Blisters
66	*Pergularia daemia* (Forssk.) Chiov.	Dustaputeega	Climber	Leaf	Bone fracture
67	*Phoenix sylvestris* (L.) Roxb.	Chiitieetha	Tree	Root	Asthma
68	*Phyllanthus amarus* Schumach. & Thonn.	Nelausiri	Herb	Plant	Jaundice
69	*Phyllanthus emblica* L.	Usirichettu	Tree	Leaf	Bone fracture
70	*Polyalthia cerasoides* (Roxb.) Bedd.	Asoka	Tree	Gum	Chest pain
71	*Pongamia pinnata* (L.) Pierre	Kanuga	Tree	Leaf	Cough
72	*Pterocarpus marsupium* Roxb.	Yegisa	Tree	Stem bark	Conception
73	*Pueraria tuberosa* (Willd.) DC.	Gummuduteega	Climber	Root	Ulcers
74	*Rauvolfia serpentina* (L.) Benth. ex Kurz	Pathalagaridi	Herb	Root	Fever
75	*Rauvolfia tetraphylla* L.	Pathalagaridi	Herb	Root bark	Blood pressure
76	*Rubia cordifolia* L.	Mangalikatthi	Herb	Root	Stomach pain
77	*Semecarpus anacardium* L.f.	Nalla jeedi	Tree	Seed	Swellings
78	*Sida acuta* Burm.f.	Ganneru	Herb	Root	Boils
79	*Solanum nigrum* L.	Kamanchi	Herb	Whole plant	Gonorrhoea
80	*Solanum surattense* Burm. f.	Mullavnga	Herb	Root bark	Jaundice
81	*Soymida febrifuga* (Roxb.) A. Juss.	Somida	Tree	Root	Dysmenorrhoea
82	*Sterculia urens* Roxb.	Kovelachettu	Tree	Root	Antifertility
83	*Streblus asper* Lour.	Rugechettu	Tree	Stem bark	Diarrhoea
84	*Tamarindus indica* L.	Chinta	Tree	Bark	Asthma
85	*Tarenna asiatica* (L.) Kuntze ex K.Schum.	Kommi	Shrub	Stem bark	Dysentery
86	*Tephrosia hirta* Bojer	Vempali	Herb	Root	Fever
87	*Terminalia arjuna* (Roxb. ex DC.) Wight	Tellamaddi	Tree	Bark	Asthma
88	*Terminalia bellirica* (Gaertn.) Roxb.	Thanechettu	Tree	fruit	Asthma
89	*Terminalia chebula* Retz.	Karakaya	Tree	fruit	Cough
90	*Tridax procumbens* (L.) L.	Gaddichamanthi	Herb	Leaf	Cuts
91	*Tylophora indica* (Burm. f.) Merr.	Mekameyaniaaku	Climber	Leaf	Asthma
92	*Vernonia cinerea* (L.) Less.	Sahadevi	Herb	Seed	Leucorrhoea
93	*Wrightia tinctoria* R.Br.	Ankudu	Tree	Latex	Asthma
94	*Xanthium strumarium* L.	Marulamatangi	Herb	Root	Boils
95	*Xylia xylocarpa* (Roxb.) Taub.	Kondatangedu	Tree	Root	Gonorrhoea

96	*Ziziphus abyssinica* Hochst. ex A.Rich.	Parimi	Climber	Root	Chest pain
97	*Ziziphus rugosa* Lam.	Konda Regu	Tree	Leaf	Diabetes
98	*Zornia diphylla* (L.) Pers.	Malam mokka	Herb	Whole plant	Diarrhoea

4. Conclusion

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. It is high time now, that all the Governmental and Non-Governmental Organizations should redouble their efforts to conserve plants of potential economic value, particularly ethnomedicinal plants and the ecosystems they inhabit. 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. Educated younger generation of the primitive tribals should be encouraged by the Government to protect and cultivate these valuable herbal plants before they get lost due to the impact of modernization and urbanization and also due to deforestation.

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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