

Ethnobotanical Survey of Medicinal Plants in Perali Village, Kunnam Taluk, Perambalur District, Tamilnadu, India



Botany

KEYWORDS : Medicinal plants, Perali village, Kunnam, Perambalur.

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ABSTRACT

India is one of the richest floristic regions of the world and has been a diverse source of plant products and many of these plants species are used for medicinal purposes. The medicinal plants occupy an important position in the social- culture and therapeutic purposes. The tribal and rural population of the India is to a large extent depended on medicinal plants for health care. The present work is carried out in Perali village of Kunnam taluk, Perambalur district. Totally 102 plants are studied to cure various diseases like asthma, ulcer, cold, fever, poisonous bites, skin diseases and eye problem. Human health through medicinal plants has recently become a global concern. The valuable medicinal plants and herbs are being lost due to lack of awareness, records and deforestation.

Introduction

Herbal remedies are considered as the oldest forms of healthcare are known to mankind on this earth. Prior to the development of modern medicine, the traditional systems of medicine that have evolved over the centuries within various communities is still maintained as a great traditional knowledge base in herbal medicines. Traditionally, this treasure of knowledge has been passed orally from generation to generation without any written document and is retained by various indigenous groups around the world. Traditional folk medicine uses the knowledge skills and practice based on the theories, beliefs and experiences. Indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources. Recently, ethnobotanical survey has been found to be one of the reliable approaches to drug discovery. Several active compounds have been discovered from plants on the basis of ethnobotanical information and are used directly as patented drugs (Natarajan *et al.*, 2013).

The main focus of the present study is to obtain detailed information on the use of plants and their medicinal uses among Perali village of Kunnam taluk, perambalur district, Tamil Nadu.

Materials and methods

Ethnobotanical survey of the Perali village from Kunnam Taluk, Tamil Nadu, India was carried out during the year 2014 between May and August (Plate: 1).

Kunnam Taluk

The study area Kunnam taluk is a taluk of Perambalur district Tamil Nadu, India. The headquarters of the taluk is the Kunnam town. It is a town and a special grade municipality in the Perambalur district. It is located 18 km away from Perambalur. Kunnam is known for its temples. There are around 12 Hindu temples within the municipal limits of area. The most important temples present in Kunnam are the Amman temple, the Kaleswaran temple and the Ramaswamy temple. The types of soil which is predominantly found here are red loamy and block soil. Loamy soil contain enormous amount of nutrients which is suitable for the growth of large plant vegetation. These plants contain high medicinal value for different ailments.

Description of study area

Perali is a village in Kunnam taluk of Perambalur District, Tamil Nadu, India with a total number of 671 families residing. It is located 10 km towards East from district head quarters Perambalur. 11 km from Veppur and 289 km from state capital Chennai. Sithali, Sengunam, Othium, Kalpadi, Asur are the nearby villages to Perali (Fig: 1).



Fig: 1 Map showing study area

Plate: 1 Plant collection at Perali village, Perambalur district



Methods of data collection

The ethnobotanical data were collected using interviews and discussions with local people. The Flora of Presidency of Madras (Gamble, 1935) was used to ascertain the nomenclature of the plant species. Medicinal plants are arranged in alphabetical order in Table -1.

Result and discussion

In this study, we discussed with local people about the collected medicinal plants of Perali village, Perambalur district. They have lots of knowledge about medicinal plants and gave more information to us. Totally 102 medicinal plants belonging to 45 families were recorded. Among the recorded plant species, 94 belong to dicotyledons and 8 belong to monocotyledons. These medicinal plants were categorized into four types: 37 trees, 28 herbs, 27 shrubs and 10 climbers (Table: 2, Fig: 2). Trees were dominant followed by herbs, shrubs and climbers. Similarly, Thapa *et al.*, (2014) reported that 30 species of trees followed by 16 species of herbs, 12 species of shrubs and 9 species of climbers. In his observation, all plant species were wild and highly used for medicinal purposes by Raji tribe of Western Nepal. In the present study, the highest number of medicinally important plants were observed in Fabaceae (16) followed by Malvaceae (6), Apocynaceae (6), Euphorbiaceae (6), Lamiaceae (5), Amaranthaceae (4), Convolvulaceae (3), Arecaceae (3), Myrtaceae (3), Cucurbitaceae (3), Sapindaceae (2), Rubiaceae (2), Cleomaceae (2), Meliaceae (2), Asteraceae (2), Anacardiaceae (2), Nyctaginaceae (2), Bignonaceae (2), Solanaceae (2), Moraceae (2), Phyllanthaceae (2) and other families had one genera. *Sida acuta*, *Cissus quadrangularis*, *Cleome viscosa*, *Clitoria ternatea*, *Azadirachta indica*, *Achyranthes aspera*, *Acalypha indica*, *Justicia adhatoda*, *Parthenium hysterophorus*, *Tamarindus indica*, *Boerhavia* sp., *Tridax procumbens*, *Euphorbia hirta* and *Lantana camara* were dominant species in the study area. In dominant species, the whole plant of *Acalypha indica* used to treat worm infestation, piles, burns, skin eruptions, ear diseases and urinary diseases. *Achyranthus aspera* (Whole plant) is used to ear diseases, jaundice, piles and stomach disorders. The seed oil of *Euphorbia hirta* applied to warts

and whole plant is used to cure urinary diseases and asthma. According to Khaleal Basha *et al.*, (2013) the above mentioned plants possesses wound healing property. The leaf of *Acalypha indica* is ground into a paste and taken orally along with the leaf paste of *Mimosa pudica* and *Albizia lebbek* to treat skin eruptions and wounds. *Achyranthus aspera* is applied on cut wounds. The fresh latex of *Euphorbia hirta* is applied topically on affected places to heal wounds.

In the present study, Leaves constituted the major plant part used (67%) followed by Flower (30%), Root (29%), Stem (26%), Bark (27%), Whole plant (13%), Fruits (8%), Seed (4%), Latex (1%), Tuber (0.9%), Spadix (0.9%), Fig (0.9%), Rhizome (0.9%) (Table:3, Fig:3). Giday *et al.* (2003) also revealed that leaves were most commonly used for medicinal purpose than other plant parts including stem bark, seeds, root, pods and fruits. This practice helps to reduce the rate of threat on plant species. The leaves especially are the centre of manufacture of most of the bioactive compounds which have been found useful in curative medicare (Agboola, 2002). However, some authors have reported that roots are more commonly collected plant parts in Ethnoveterinary practice (Yinegar *et al.*, 2007, Tubiti *et al.*, 2003, Hunde *et al.*, 2004). Scientifically, leaves are actively involved in photosynthesis and the production of metabolites (Ghorbani *et al.*, 2005), thus, the numerous constituents found in leaves could explain their efficacy in the treatment of various ailments in both humans and animals. From the conservation point of view, collection of leaves for herbal preparations could be regarded as sustainable so long as some leaves are left on the parent plant. This is opposed to the collection of roots which could be a severe threat for rare and slowly producing plants.

Table: 1 List of Medicinal plants in Perali village, Perambalur (Dt.)

S. no	Binomial name	Family	Habit	Medicinal uses
1	<i>Abelmoschus esculentus</i> (L.) Moench	Malvaceae	Herb	Diarrhea, dysentery and cough.
2	<i>Abutilon indicum</i> (Link.) Sweet	Malvaceae	Herb	Piles, ulcer, jaundice, cough and leprosy.
3	<i>Acalypha indica</i> L.	Euphorbiaceae	Herb	Worm infestation, skin eruptions, ear diseases, urinary diseases and piles.
4	<i>Achyranthes aspera</i> L.	Amaranthaceae	Herb	Head and ear diseases, piles and stomach disorder.
5	<i>Aerva lanata</i> (L.) Juss. ex Schult.	Amaranthaceae	Herb	Wounds, cardiac diseases and uterine diseases.
6	<i>Alangium salvifolium</i> (L.f.)	Alangiaceae	Tree	Leprosy, fever and diarrhea.
7	<i>Albizia amara</i> (Roxb.) Boiv.	Fabaceae	Tree	Cough and dyspnoea.
8	<i>A. lebbek</i> (L.) Benth.	Fabaceae	Tree	Leprosy, wounds, snake bite and cough.
9	<i>A. saman</i> F. Mueel.	Fabaceae	Tree	Eczeema, ulcer and leprosy.
10	<i>Allium cepa</i> L.	Amaryllidaceae	Herb	Piles, jaundice, cardiac diseases, cough and skin diseases.

11	<i>Anisomeles malabarica</i> (L.) R. Br. ex Sims	Lamiaceae	Shrub	Digestive disorders, eczema, fever, cough and diseases of head.
12	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Tree	Leprosy, liver disorder. Cough, wounds, fever and eye diseases.
13	<i>Azima tetracantha</i> Lam,	Salvadoraceae	Shrub	Dropsy, eczema, ulcers, swellings in joints and cough.
14	<i>Boerhavia plumbaginea</i> Cav.	Nyctaginaceae	Herb	Jaundice, piles, cardiac diseases and retention of urine.
15	<i>B. diffusa</i> L.	Nyctaginaceae	Herb	Nasal disorder and stomach pain.
16	<i>Borassus flabelifer</i> L.	Arecaceae	Tree	Bleeding, thirst, skin diseases, fever and burning sensation.
17	<i>Cajanus cajan</i> (L.) Millsp.	Fabaceae	Shrub	Swellings and dental disorders.
18	<i>Calotropis gigantea</i> (L.) W.T. Aiton	Apocynaceae	Shrub	Leprosy, swelling in joints, worm infestation and rat-bite poisonings.
19	<i>Canthium coromandelicum</i> (Burm.f.)	Rubiaceae	Shrub	Fractures
20	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Climber	Tumors, dermal disorders and piles.
21	<i>Carica papaya</i> L.	Caricaceae	Tree	Fever, piles, indigestion, cardiac diseases and worm infestation.
22	<i>Cassia fistula</i> L.	Fabaceae	Tree	Leprosy, jaundice, fever and cardiac diseases.
23	<i>Celosia argentea</i> L.	Amaranthaceae	Herb	Eczema, glandular swellings, ulcer and dysentery.
24	<i>Cissus quadrangularis</i> L.	Vitaceae	Climber	Piles, abdominal disorders, piles and worm infection.
25	<i>Cleome gynandra</i> L.	Cleomaceae	Herb	Fever.
26	<i>C. viscosa</i> L.	Cleomaceae	Herb	Skin diseases, abdominal disorders, indigestion and ear diseases.
27	<i>Clerodendron inerme</i> (L.) Gaertn.	Lamiaceae	Shrub	Glandular swellings, eczema, scabies, pain and snake-bite poisoning.

28	<i>C. phlomidis</i> L.f.	Lamiaceae	Shrub	Cardiac diseases, polyuria and piles,
29	<i>Clitoria ternatea</i> L.	Fabaceae	Climber	Fever, digestive disorders, worm infection and headache.
30	<i>Cocinia grandis</i> (L.) voigt	Cucurbitaceae	Climber	Diabetes, skin diseases, fever, liver diseases and jaundice.
31	<i>Cocos nucifera</i> L.	Arecaceae	Tree	Skin diseases, dysentery and eye diseases.
32	<i>Corchorus capsularis</i> L.	Malvaceae	Shrub	Wounds and stomach disorders.
33	<i>Crotalaria trichotoma</i> Bojer	Fabaceae	Shrub	Blood disorder and skin diseases.
34	<i>Cucurbita pepo</i> L.	Cucurbitaceae	Climber	Mental disorders, tuberculosis, cough and fever.
35	<i>Cuscuta reflexa</i> Roxb.	Convolvulaceae	Climber	Liver disorders.
36	<i>Cymbopogon martini</i> (Roxb.) Wats.	Poaceae	Herb	Throat diseases, cardiac diseases, cough and fever.
37	<i>Cyperus rotundus</i> L.	Cyperaceae	Herb	Fever, thirst, intermittent fever, dysentery and pain.
38	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Herb	Thirst, skin diseases, distaste and vomiting.
39	<i>Datura metel</i> L.	Solanaceae	Shrub	Wounds, ulcer, skin diseases, leprosy, cough and diarrhea.
40	<i>Delonix elata</i> (L.) Gamble	Fabaceae	Tree	Wounds and glandular swellings.
41	<i>D. regia</i> (Boj. ex Hook.) Raf.	Fabaceae	Tree	Constipation and inflammations.
42	<i>Dodonaea angustifolia</i> L.f.	Sapindaceae	Shrub	Inflammation
43	<i>Eucalyptus longifolia</i> L.	Myrtaceae	Tree	Throat pain and diarrhea.
44	<i>Euphorbia antiquorum</i> L.	Euphorbiaceae	Shrub	Abdominal disorders, diabetes, leprosy and rheumatism.
45	<i>E. hirta</i> L.	Euphorbiaceae	Herb	Worm infection, urinary disorder and asthma.
46	<i>E. milii</i> Des Moul.	Euphorbiaceae	Shrub	Warts and cancer.
47	<i>Evolvulus alsinoides</i> (L.)	Convolvulaceae	Herb	Fever, cough and diarrhea.
48	<i>Ficus religiosa</i> L.	Moraceae	Tree	Ulcers, cough and constipation.
49	<i>F. benghalensis</i> L.	Moraceae	Tree	Polyuria, ulcers, dental and gum disorders.
50	<i>Gomphrena serrata</i> L.	Amaranthaceae	Herb	Cough.

51	<i>Gymnema sylvestire</i> R.Br.	Apocynaceae	Climber	Fever, leprosy, asthma and wounds.
52	<i>Hemidesmus indicus</i> (L.) R. Br.	Apocynaceae	Herb	Diabetes, fever, thirst and urinary diseases.
53	<i>Hibiscus rosasinensis</i> L.	Malvaceae	Shrub	Polyuria, piles and cough.
54	<i>Holoptelea integrifolia</i> Planch.	Ulmaceae	Tree	Tuberculosis, piles, leprosy and vomiting.
55	<i>Ipomea carnea</i> Jace.	Convolvulaceae	Shrub	Chest pain.
56	<i>Jasminum sambac</i> (L.) Aiton	Oleaceae	Shrub	Wounds, eye diseases and leprosy.
57	<i>Jatropha curcas</i> L.	Euphorbiaceae	Shrub	Constipation, ulcers, piles, eczema and abdominal disorders.
58	<i>Justicia adhatoda</i> L.	Acanthaceae	Shrub	Cough, tuberculosis, piles, leprosy and vomiting.
59	<i>Lanena coromandelica</i> (Houtt.) Merr.	Anacardiaceae	Tree	Diarrhea, cardiac diseases, ulcer, wounds and dental diseases.
60	<i>Lantana camara</i> L.	Verbenaceae	Shrub	Diarrhea.
61	<i>Madhuca longifolia</i> (J. Konig) J. F. Macbr.	Sapotaceae	Tree	Fever, thirst, eczema and ulcers.
62	<i>Mangifera indica</i> L.	Anacardiaceae	Tree	Ear diseases, diarrhea, urinary diseases, intermittent fever and ulcers.
63	<i>Melia dubia</i> Cav.	Meliaceae	Tree	Worm infestation, polyuria, piles, abdominal diseases and piles.
64	<i>Millettia pinnata</i> (L.) Panigrahi	Fabaceae	Tree	Wounds, uterine disorders, headache and leprosy.
65	<i>Millingtonia hortensis</i> L.f.	Bignoniaceae	Tree	Antipyretic.
66	<i>Mollugo nudicaulis</i> Lam.	Molluginaceae	Herb	Whooping cough
67	<i>Momordica charantia</i> L.	Cucurbitaceae	Climber	Intestinal worms, fever, cough, piles, skin diseases and jaundice.
68	<i>Morinda tinctoria</i> Roxb.	Rubiaceae	Tree	Eczema, fever, ulcer, glandular swellings and digestive disorders.
69	<i>Murraya koenigii</i> (L.) Sprengel.	Rutaceae	Tree	Dropsy, dysentery and mental disorders.
70	<i>Musa paradisiaca</i> L.	Musaceae	Tree	Piles, dysentery, eye diseases, thirst and burning sensation.
71	<i>Nelumbo nucifera</i> Gaertn.	Nelumbonaceae	Herb	Bleeding piles, cardiac diseases, fever and thirst.

72	<i>Nerium oleander</i> L.	Apocynaceae	Shrub	Leprosy, wounds and glandular swellings.
73	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Herb	Fever, mental disorder, cough, ulcers and digestive disorders.
74	<i>Opuntia stricta</i> (Haw.)	Cactaceae	Shrub	Cough and constipation.
75	<i>Parthenium hysterophorus</i> L.	Asteraceae	Herb	Dysentery.
76	<i>Passiflora foetida</i> L.	Passifloraceae	Climber	Asthma.
77	<i>Pergularia daemia</i> (Forssk.)	Apocynaceae	Climber	Asthma, digestive disorders, leprosy and piles.
78	<i>Phoenix loureiroi</i> Kunth	Arecaceae	Tree	Fever, thirst and cough.
79	<i>Phyllanthus niruri</i> L.	Phyllanthaceae	Herb	Jaundice, vomiting, urinary diseases, diabetes and skin diseases.
80	<i>P. reticulatus</i> Poir.	Phyllanthaceae	Shrub	Dysentery and venereal diseases.
81	<i>Physalis minima</i> L.	Solanaceae	Herb	Diabetes and asthma.
82	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Fabaceae	Tree	Earache, dysentery, venereal diseases and leprosy.
83	<i>Polyalthia longifolia</i> Sonn.	Annonaceae	Tree	Diarrhea, rheumatism, worm infestation and skin diseases.
84	<i>Prosopis cineraria</i> (L.) Druce	Fabaceae	Tree	Dysentery, piles, worm infestation, skin diseases and cough.
85	<i>Psidium guajava</i> L.	Myrtaceae	Tree	Vomiting and urinary disorders.
86	<i>Punica granatum</i> L.	Lythraceae	Tree	Dental disorders, intermittent fever, cardiac diseases and dysentery.
87	<i>Ricinus communis</i> L.	Euphorbiaceae	Shrub	Piles, jaundice, cough and leprosy.
88	<i>Sansevieria trifasciata</i> Prain	Asparagaceae	Shrub	Earache, cough, piles, asthma and tuberculosis.
89	<i>Senna alata</i> (L.) Roxb.	Fabaceae	Shrub	Skin diseases.
90	<i>S. auriculata</i> (L.) Roxb.	Fabaceae	Shrub	Leprosy, eye diseases, diarrhea and worm infestation.
91	<i>Sida acuta</i> Burm.f.	Malvaceae	Herb	Fever, ear diseases, skin eruptions, tuberculosis and diarrhea.
92	<i>S. cordata</i> Burm.f.	Malvaceae	Herb	Wounds and diarrhea.

93	<i>Syzygium cumini</i> (L.) Skeels.	Myrtaceae	Tree	Burning sensation, diabetes, thirst and eczema.
94	<i>Tamarindus indica</i> L.	Fabaceae	Tree	Ulcers and dropsy.
95	<i>Tecoma stans</i> (L.) Juss. ex Kunth.	Bignoniaceae	Tree	Diuretic.
96	<i>Tectona grandis</i> L.f.	Lamiaceae	Tree	Inflammatory, skin diseases, ulcers and worm infestation.
97	<i>Terminalia catappa</i> L.	Combretaceae	Tree	Rheumatism, dysentery.
98	<i>Trianthema portulacastrum</i> L.	Aizoaceae	Herb	Swellings, headache, cough and eye diseases.
99	<i>Tridax procumbens</i> L.	Asteraceae	Herb	Wounds and dysentery.
100	<i>Vachellia nilotica</i> (L.) P. J. H. Hurter & Mabb.	Fabaceae	Tree	Ulcers, cough, dental disorders and dysentery.
101	<i>Vigna mungo</i> (L.) Hepper.	Fabaceae	Herb	Nervous disorders.
102	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	Tree	Diarrhea, skin diseases, urinary diseases and vomiting.

Table: 2 Compositions of Herb, Shrub, Trees and Climber

S.no	Types of plants	Number of plants	% of plants
1	Herb	28	27
2	Shrub	27	26
3	Climber	10	9
4	Trees	37	36

Fig: 2 Compositions of Herb, Shrub, Climber and Trees

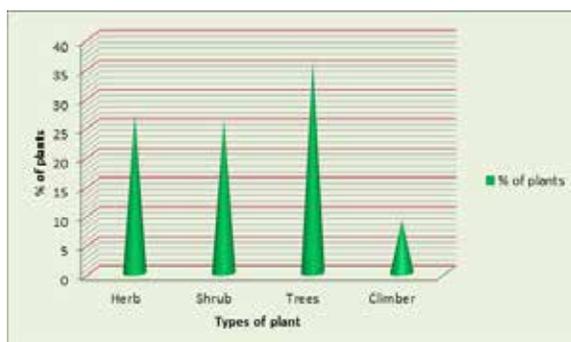
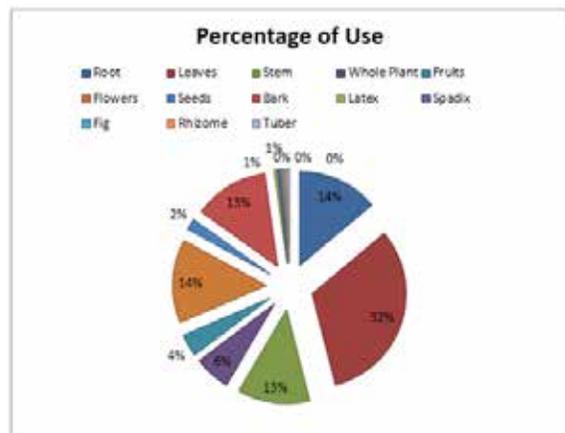


Table: 3 Percentage use of plant parts or whole plant by the people of study area

S. No	Plant parts used	Percentage of Use
1	Root	29
2	Leaves	67
3	Stem	26
4	Whole Plant	13
5	Fruits	8
6	Flowers	30
7	Seeds	4
8	Bark	27
9	Latex	1
10	Spadix	0.9
11	Fig	0.9
12	Rhizome	0.9

13	Tuber	0.9
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Fig.: 3 Percentage use of plant parts or whole plant



Conclusion

The ethnobotanical survey indicated that, the study area has plenty of medicinal plants. These medicinal plants are used to cure illness and other purposes like fodder and natural manures. *Euphorbia milii*, *Senna alata*, *Delonix regia*, *Albizia saman* and *Pithecellobium dulce* are excellent medicinal plants. Unfortunately due to their over exploitation there is a danger to those plants and possibilities to become a red listed plants. Therefore, efforts must be taken to protect these plant species in this area and to involve the local communities in preservation and conservation aspects.

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