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A Study on Diversity of Medicinal Plants in Nannai Village, Perambalur District, Tamilnadu, South India

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KEYWORDS

Medicinal plants,
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A B S T R A C T

The survey of medicinal plants in a particular area is important to conserve the traditionally important plants. India is rich in vegetation and known for its rich biodiversity of medicinal plants, hence called botanical garden of the world. To record the medicinal plants of Nannai Village, Perambalur district, and the usage of these medicinal plants to remediate the diseases among the peoples, explorative field trips were made to the village to survey the medicinal plants and to collect the information from the villagers. In the present investigation 69 species of valuable medicinal plants belonging to different families were recorded and their ethnomedicinal values were collected from the village people. This study focuses the importance, utilization and conservation of the medicinal plants among the people.

Introduction

India is rich in ethnic diversity and has more practical knowledge on usage of traditional herbal medicines. Generally medicinal plants are the most abundant in tropical countries. India has wide variations in climate, soil, altitude and latitude. Nature has granted very rich botanical wealth and a large number of diverse types of plants growing wild in different parts of the country. The practices of traditional medicine are wide spread in China, India, Japan, Pakistan, Sri Lanka and Thailand. In India, herbal medicines have been used traditionally for a long period. On the basis

of the treatment for various diseases, traditional methods are practiced as Ayurveda, Unani and Siddha in spite of tremendous developments in the fields of Allopathy.

Today, plants remain as one of the major source of drugs in modern as well as traditional system of medicine throughout the world (Vethanarayanan *et al.*, 2011). Plants are playing an important role in the health of millions of people's life in many villages of India in their day today life by its

traditional usage. People living in developing countries mostly depends on plant resources found in agricultural and forest areas for food, fodder, medicine and shelter. Nearly 80% of the population globally depends on traditional medicine for primary health care (Muralidharan and Narasimhan, 2012).

The medicinal plants are rich in secondary metabolites and essential oils of therapeutic importance. The important advantages claimed for therapeutic uses of medicinal plants in various ailments are their safety besides being economically effective and their easy availability. Because of these advantages the medicinal plants have been widely used by the traditional medical practitioners in their day to day practice. According to a survey of World Health Organization (WHO), the practitioners of traditional system of medicine treat about 80% of patients in India, 85% in Burma and 90% in Bangladesh (Ranganathan *et al.*, 2012).

Ethnobotany allows interaction between researchers with the local people that have the knowledge about use of plants. These people manage and conserve significant amounts of biological resources useful for industry and world community. Hence, the present study is to highlight the diversity of medicinal plants in Nannai village, Perambalur district, Tamil Nadu.

Materials and Methods

Study Area

Nannai is a large village located in Kunnam taluk of Perambalur district, Tamil Nadu with total 735 families residing. The Nannai village has population of 2831 of which 1451 are males while 1380 are females as per population Census 2011. The latitude 11.327954 and longitude 79.0556109 are the

geocoordinate of the Nannai. The surrounding nearby villages from Nannai are Andikurumbalur, Paravai, Olaippadi, Pennakonam, Pudukkottai, Ogalur, Thungapuram, Andhur, Kadur, Asur, Sithali and Perali. Tittakudi, Perambalur, Virudhachalam, Thuraiyur are the nearby cities to Nannai. The types of soil which is predominantly found here are red loamy and black soil. The Native language of Nannai is Tamil and most of the village people speak Tamil (Fig: 1). The collected medicinal plants were identified with the help of the Flora of the Presidency of Madras (Gamble, 1936).

Results and Discussion

The survey of medicinal plants was carried out in Nannai village of Perambalur district. Totally 69 medicinal plants belonging to 38 families were recorded (Table: 1). Among the 69 species, 18 (26%) were herbs, 14 (20%) shrubs, 9 (13%) climbers and 28 (40%) trees (Table: 2 & Fig: 2). In contrast in Javadhu hills, Mohamed Tariq *et al.*, (2013) investigated the habit wise distribution. Among them 20 were herbs, 16 trees, 10 climbers and 9 shrubs. They reported that the herbaceous plants are dominant in Javadhu hills. The common use of herbaceous medicinal plants was also reported in other part of the world like Kanyakumari district and Red Hills, Tamilnadu (Jeeva *et al.*, 2012 and Govindasamy Bosco and Arumugam, 2012). In the present study the most dominant families with highest number of usage of medicinal plants in the study area was Fabaceae (9 plants) followed by Apocynaceae (6 plants), Euphorbiaceae (5 plants), Cucurbitaceae (3 plants), Lamiaceae (3 plants), Malvaceae (3 plants), Amaranthaceae (2 plants), Arecaceae (2 plants), Moraceae (2 plants), Poaceae (2 plants), Rutaceae (2 plants) and other families had only one plant species each.

Table.1 Diversity of Medicinal Plants in Nannai Village, Perambalur District

S.no	Binomial name	Family	Habit	Medicinal uses
1.	<i>Abutilon indicum</i> (Link.) Sweet	Malvaceae	Shrub	Piles, ulcer, jaundice, cough and leprosy.
2.	<i>Acalypha indica</i> L.	Euphorbiaceae	Herb	Worm infestation, skin eruptions, ear diseases, urinary diseases and piles.
3.	<i>Achyranthes aspera</i> L.	Amaranthaceae	Herb	Head and ear diseases, piles and stomach disorder.
4.	<i>Aerva lanata</i> (L.) Juss. ex Schult.	Amaranthaceae	Herb	Wounds, cardiac diseases and uterine diseases.
5.	<i>Alangium salvifolium</i> (L.f.)	Alangiaceae	Tree	Leprosy, fever and diarrhea.
6.	<i>Albizia saman</i> F. Muell.	Fabaceae	Tree	Eczema, ulcer and leprosy.
7.	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Tree	Leprosy, liver disorder. Cough, wounds, fever and eye diseases.
8.	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Herb	Nasal disorder and stomach pain.
9.	<i>Borassus flabellifer</i> L.	Arecaceae	Tree	Bleeding, thirst, skin diseases, fever and burning sensation.
10.	<i>Calotropis gigantea</i> (L.) W.T. Aiton	Apocynaceae	Shrub	Leprosy, swelling in joints, worm infestation and rat-bite poisonings.
11.	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Climber	Tumors, dermal disorders and piles.
12.	<i>Carica papaya</i> L.	Caricaceae	Tree	Fever, piles, indigestion, cardiac diseases and worm infestation.
13.	<i>Cissus quadrangularis</i> L.	Vitaceae	Climber	Piles, abdominal disorders, piles and worm infection.
14.	<i>Clausena anisata</i> (Willd.) Hook.f. ex Benth.	Rutaceae	Tree	Fever, venereal disorders, cough and malaria.
15.	<i>Cleome gynandra</i> L.	Cleomaceae	Herb	Fever.
16.	<i>C. viscosa</i> L.	Cleomaceae	Herb	Skin diseases, abdominal disorders, indigestion and ear diseases.
17.	<i>Clitoria ternatea</i> L.	Fabaceae	Climber	Fever, digestive

				disorders, worm infection and headache.
18.	<i>Cocinia grandis</i> (L.) voigt	Cucurbitaceae	Climber	Diabetes, skin diseases, fever, liver diseases and jaundice.
19.	<i>Cocos nucifera</i> L.	Arecaceae	Tree	Skin diseases, dysentery and eye diseases.
20.	<i>Cucurbita pepo</i> L.	Cucurbitaceae	Climber	Mental disorders, tuberculosis, cough and fever.
21.	<i>Cucurbita maxima</i> Duchesne	Cucurbitaceae	Fruit	Diabetes and inflammation.
22.	<i>Cymbopogon martini</i> (Roxb.) Wats.	Poaceae	Herb	Throat diseases, cardiac diseases, cough and fever.
23.	<i>Cyperus rotundus</i> L.	Cyperaceae	Herb	Fever, thirst, intermittent fever, dysentery and pain.
24.	<i>Datura metel</i> L.	Solanaceae	Shrub	Wounds, ulcer, skin diseases, leprosy, cough and diarrhea.
25.	<i>Delonix elata</i> (L.) Gamble	Fabaceae	Tree	Wounds and glandular swellings.
26.	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Herb	Worm infection, urinary disorder and asthma.
27.	<i>E. milii</i> Des Moul.	Euphorbiaceae	Shrub	Warts and cancer.
28.	<i>Ficus religiosa</i> L.	Moraceae	Tree	Ulcers, cough and constipation.
29.	<i>F. benghalensis</i> L.	Moraceae	Tree	Polyuria, ulcers, dental and gum disorders.
30.	<i>Gomphrena serrata</i> L.	Amaranthaceae	Herb	Cough.
31.	<i>Gymnema sylvestre</i> R.Br.	Apocynaceae	Climber	Fever, leprosy, asthma and wounds.
32.	<i>Hemidesmus indicus</i> (L.) R. Br.	Apocynaceae	Herb	Diabetes, fever, thirst and urinary diseases.
33.	<i>Hibiscus rosa- sinensis</i> L.	Malvaceae	Shrub	Polyuria, piles and cough.
34.	<i>Holoptelea integrifolia</i> Planch.	Ulmaceae	Tree	Tuberculosis, piles, leprosy and vomiting.
35.	<i>Ipomea carnea</i> Jace.	Convolvulaceae	Shrub	Chest pain.
36.	<i>Jatropha curcas</i> L.	Euphorbiaceae	Shrub	Constipation, ulcers, piles, eczema and abdominal disorders.
37.	<i>Justicia adhatoda</i> L.	Acanthaceae	Shrub	Cough, tuberculosis, piles, leprosy and vomiting.

38.	<i>Mangifera indica</i> L.	Anacardiaceae	Tree	Ear diseases, diarrhea, urinary diseases, intermittent fever and ulcers.
39.	<i>Martynia annua</i> L.	Martyniaceae	Shrub	Tuberculosis, sorethroat and snakebite.
40.	<i>Millettia pinnata</i> (L.) Panigrahi	Fabaceae	Tree	Wounds, uterine disorders, headache and leprosy.
41.	<i>Millingtonia hortensis</i> L.f.	Bignoniaceae	Tree	Antipyretic.
42.	<i>Mollugo nudicaulis</i> Lam.	Molluginaceae	Herb	Whooping cough
43.	<i>Morinda tinctoria</i> Roxb.	Rubiaceae	Tree	Eczema, fever, ulcer, glandular swellings and digestive disorders.
44.	<i>Murraya koenigii</i> (L.) Sprengel.	Rutaceae	Tree	Dropsy, dysentery and mental disorders.
45.	<i>Musa paradisiaca</i> L.	Musaceae	Tree	Piles, dysentery, eye diseases, thirst and burning sensation.
46.	<i>Nerium oleander</i> L.	Apocynaceae	Shrub	Leprosy, wounds and glandular swellings.
47.	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Herb	Fever, mental disorder, cough, ulcers and digestive disorders.
48.	<i>Opuntia stricta</i> (Haw.)	Cactaceae	Shrub	Cough and constipation.
49.	<i>Passiflora foetida</i> L.	Passifloraceae	Climber	Asthma.
50.	<i>Pergularia daemia</i> (Forssk.)	Apocynaceae	Climber	Asthma, digestive disorders, leprosy and piles.
51.	<i>Phyllanthus niruri</i> L.	Phyllanthaceae	Herb	Jaundice, vomiting, urinary diseases, diabetes and skin diseases.
52.	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Fabaceae	Tree	Earache, dysentery, venereal diseases and leprosy.
53.	<i>Polyalthia longifolia</i> Sonn.	Annonaceae	Tree	Diarrhea, rheumatism, worm infestation and skin diseases.
54.	<i>Prosopis cineraria</i> (L.) Druce	Fabaceae	Tree	Dysentery, piles, worm infestation, skin diseases and cough.
55.	<i>Psidium guajava</i> L.	Myrtaceae	Tree	Vomiting and urinary disorders.

56.	<i>Punica granatum</i> L.	Lythraceae	Tree	Dental disorders, intermittent fever, cardiac diseases and dysentery.
57.	<i>Ricinus communis</i> L.	Euphorbiaceae	Shrub	Piles, jaundice, cough and leprosy.
58.	<i>Senna auriculata</i> (L.) Roxb.	Fabaceae	Shrub	Leprosy, eye diseases, diarrhea and worm infestation.
59.	<i>Sida acuta</i> Burm.f.	Malvaceae	Herb	Fever, ear diseases, skin eruptions, tuberculosis and diarrhea.
60.	<i>Tabernaemontana divaricata</i> R. Br. ex Roem. & Schult.	Apocynaceae	Shrub	Toothache and vermicide.
61.	<i>Tamarindus indica</i> L.	Fabaceae	Tree	Ulcers and dropsy.
62.	<i>Tectona grandis</i> L.f.	Lamiaceae	Tree	Inflammatory, skin diseases, ulcers and worm infestation.
63.	<i>Terminalia catappa</i> L.	Combretaceae	Tree	Rheumatism, dysentery.
64.	<i>Trianthema portulacastrum</i> L.	Aizoaceae	Herb	Swellings, headache, cough and eye diseases.
65.	<i>Tridax procumbens</i> L.	Asteraceae	Herb	Wounds and dysentery.
66.	<i>Vachellia nilotica</i> (L.) P. J. H. Hurter & Mabb.	Fabaceae	Tree	Ulcers, cough, dental disorders and dysentery.
67.	<i>Vitex negundo</i>	Lamiaceae	Shrub	Skin diseases, liver disorder, eczema, rheumatism and ringworm.
68.	<i>Zea mays</i> L.	Poaceae	Herb	Renal problems, kidney stone and diabetes.
69.	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	Tree	Diarrhea, skin diseases, urinary diseases and vomiting.

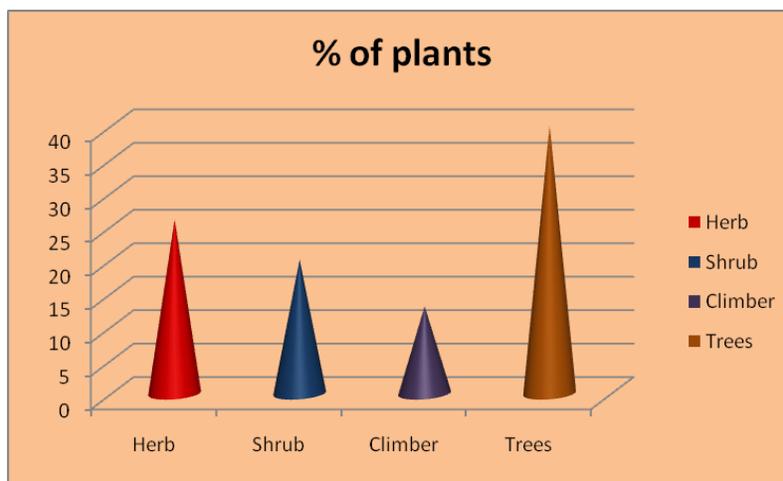
Table.2 Composition of Herb, Shrub, Climber and Trees

S.No	Types of plants	Number of plants	% of plants
1.	Herb	18	26
2.	Shrub	14	20
3.	Climber	9	13
4.	Trees	28	40

Fig.1 Study Area Map



Fig.2 Composition of Herbs, Shrubs, Climbers and Trees



Similarly, In Javadhu Hills, the family with most frequently utilized medicinal plants was Fabaceae (8 plants) followed by other families (Mohamed Tariq *et al.*, 2013). In our study the villagers used various parts of the medicinal plants based on their ability to cure diseases such as leaf, root, stem, bark,

flower etc. Leaves are highly used by the village people. Leaves remain green and available in plenty for the most of the months of a year. The use of leaves in the preparation of remedies is also common elsewhere (Pradheeps and Poyyamoli, 2013). The village people used these

medicinal plants for curing several diseases especially skin diseases, jaundice, cough, dysentery, ulcer and fever etc. The present study indicated that from the study area, 3 species were in the state of secure, least concern and data deficient category. They are namely *Albizia saman*, *Delonix elata* and *Euphorbia milii*. These plants possess high medicinal values. Therefore, conservation and protection of these medicinal plants in our study area through local peoples is an urgent need.

Conclusion

The present investigation revealed that medicinal plants still play a vital role in the health care of the people. So many medicinal plants are easily available in local area. These medicinal plants are utilized by local peoples for the various medicinal purposes. This survey is most useful to scientists for developing new compounds.

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