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## Research Article

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### A study on traditional medicinal plants of Pillur Beat (Pillur slope RF and Nellithurai RF), Karamadai range, Coimbatore district, Tamil Nadu.

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#### ABSTRACT

**Objective:** To explore traditional ethnomedicinal knowledge of Irula tribes of Pillur Beat (Pillur slope RF and Nellithurai RF), Karamadai Range, Western Ghats, Tamil Nadu, India. **Methods:** With the help of semi-structure questionnaire, resource persons were interviewed on medicinal use of local flora in six tribal villages of Pillur Beat, during the months of Jan 2016 to Aug 2016 with frequent field visits in the study area. **Results:** A total of 80 plant species belonging to 73 genera of 41 families were reported in the study area, of which trees ranked first with 36 species. In terms of the number of medicinal plant species in a family, Euphorbiaceae (8 species) is the dominant family. Leaves were most frequently used plant part for the treatment of diseases. Decoction ranks first in the mode of administration. **Conclusion:** Our study revealed that in all the studied tribal villages the plants were used to cure common diseases like fever, skin diseases, wound healing, asthma, etc. Many of these plants in the study area are to be conserved. The study also suggested that the present information on medicinal use of plants may be used for botanical and pharmacological research in future for the discovery of new sources of drugs.

**Keywords:** Pillur Beat, Irulas, Traditional medicine, ethnobotany

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## 1. Introduction

Traditional medicine is used worldwide and having great economic value in the 21st century in both developed and developing countries. Ethnobotanical studies are very important to reveal the past and present culture about plants in the world and preserving indigenous knowledge on medicinal plants. The quantitative ethnobotanical studies were utilized to detect the plant uses as food,[1] veterinary medicine [2] human health care medicines[3] and economically important.[4]

About 80% of the people in developing and less developed countries still rely only on traditional medicine obtained from local plants and 85% of traditional medicine involves the use of plant extracts.[5] Since adequate hospital facilities and allopathic doctors are absent in much of the tropics, any destruction of tropical forests would concomitantly destroy the primary healthcare network involving local plants and traditional 'doctor'. [6] About 90% of medicinal plants used in industries are collected from the wild. Over 70% of the plant collection involves destructive harvesting because of the use of the parts like roots, bark, wood, stem and the whole plant in case of herbs. The assessments done so far for the prioritized native medicinal species have resulted in the assignment of threatened status to nearly 200 plant species.[7] In view of the tremendously growing world population, increasing anthropogenic activities and rapidly eroding natural ecosystem, the natural habitat are dwindling. Many of them are facing extinction. Traditional medicinal plants use in India is about 4000 years old. According to the Red list of threatened species 44 plant species are critically endangered, 113 endangered and 87 vulnerable in India alone.[8]

Though India has rich biodiversity and one among the twelve major diversity centers, the growing demand is putting a heavy pressure on the existing resources warning a number of species to be either threatened or endangered category. Southern India includes two major bio-geographic zones the Western Ghats and the Eastern Ghats. Of the designed 25 hotspots in the world, the Eastern Himalaya and the Western Ghats are the 2 hotspots in India. It is estimated to harbour approximately 2000 known medicinal species. Of the nearly 1800 species of higher plants listed in the Red data book 171 are know from Tamil Nadu.[9] Most of these species are restricted to southern peninsula. Several workers were reported the utility of plants by many ethnic groups from birth to death and traditionally all herbal preparations were developed from plants either as simple or complex form of crude extracts.[10] However, many ethnic groups are failing to retain their collective knowledge of such medicinal plant use. Younger generations are not interested to follow these traditional medicinal practices from their ancestors and are migrating to lucrative jobs in more developed nearby urban areas. In rural communities,

medicinal plants expanded attention due to their effectiveness, lack of modern medical alternatives, rising costs of allopathic medicines and cultural preferences. [11,12] In India, attention has been paid in the field of ethnobotanical studies by various researchers and hundreds of reports has been published in the last three decades.[13,14,15] However, still much effort is necessary to save this treasure that is being diminished with the passage of time. In this scenario, the present study was conducted to document the ethnomedicinal knowledge of Irula tribal communities in Pillur Beat, Karamadai range, Coimbatore district, Tamil Nadu, India.

## 2. Material and methods

### 2.1 Study area

The present study area, Pillur Beat is confined to a major range in the Western Ghats of Nilgiri Biosphere Reserve, Coimbatore District, Tamil Nadu, India. The area of investigation approximately lies 110 - 18' latitude and 760 - 53" longitude. The altitude ranges from 1100 to 1428 m above mean sea level. Maximum mean daily temperature is 32°C during summer and minimum mean daily temperature is 11.20°C during winter. The annual average rain fall ranges from 1000 to 1400 mm. It has 12 villages with a total area of about 2742.22 Hec. The present study concentrates on 6 villages with approximately 98 residences. Each village is found in different elevation ranges from 1100 to 1400 MSL. Few villages still doesn't have electricity facilities and the floristic diversity of this region is very rich due to less anthropogenic activities.

### 2.2. Studied Tribal People (Irulas)

Our Indian tribal tour now reaches the Southern part of India by the Irula tribes. Irulas are an ethnic group of India. Early 20th century anthropological literature classified the Irulas under the Negrito ethnic group. The ancestors of these people are supposed to have come to India from Africa. The principle languages of the Irulas are Tamil and Telugu. The Irula tribes have always been an integral part of the forests of the Nilgiri Biosphere Reserve in the states of Tamil Nadu and Kerala, India. Now there are only 23,116 Irula households in Tamil Nadu.

The inhabitant of the surveyed six villages of Pillur Beat belongs to Irula tribal group. Total population of the six tribal villages (98 families) is 350 with 182 males and 168 females. The village wise population of surveyed six villages are Poochamarathur (16), Nellimarathur (15), Baralikadu (30), Neeradi (10), Melpillur (7) and Kadaman kombai (20) which were situated in 15 km radius in the study area. The major livelihoods of these Irula tribals were cattle farming, agriculture, fishing in Bhavani river, riding coracle in Pillur dam under eco tourism, collection of medicinal herbs, honey, edible fruits and tubers from the forests. Irula tribals are frequently using plant based medicines to cure their illness, since hospital facility is not

offered to these people and this leads them to practice traditional herbal medicines. They possess rich knowledge about medicinal plants and its uses. It was observed that Irulas use many valuable wild plant species to treat diseases, such as psoriasis, asthma, indigestion, diabetes, genital disorders, snake bites, toothache, dysentery, cough, cold, headache, fever, stomach ache, jaundice, wounds, kidney stones, bone fracture, de-worming, stomach ulcer, liver disease, ear pain and eye infections. This knowledge is usually transferred from generation to generation through word of mouth. Presently, there is gradual decline in the traditional healing practices among Irulas younger generation. Hence there is an urgent need to document the Irulas knowledge on ethnomedicinal practice.

### 2.3. Data collection

The necessary local government permits were secured prior to the survey. Ethnobotanical information was collected between the months of January 2016 to August 2016 with frequent field visits in the study area. During the course of time, twenty informants were identified of which four were professional traditional healers (herbalists) and other sixteen were local knowledgeable persons who had much knowledge on medicinal plants and frequently practicing herbal medicines. Age of the interviewed informants is ranging between 30 and 80. During the field survey a semi-structured questionnaire translated in the local dialect was used to interview local healers to document the self-care uses of medicinal plants by the locals, including local name of the plant, the parts used, traditional method of medicine preparation, medicinal usage and mode of administration were collected from the informants especially from elderly persons. Information was collected by interviews and discussions in their local language.

### 2.4. Plant collection and identification

The plant specimens were collected in flowering and fruiting conditions as directed by the resource persons. Photographs of the plants were also taken. Collected specimens were dried and herbarium sheets were prepared and deposited in the Department of Botany, Vellalar College for Women, Erode, Tamil Nadu, India. The binomials of the specimens were identified using 'The Flora of Tamilnadu Carnatic' [16] and 'The Flora of Presidency of Madras' [17].

## 3. Results and discussion

### 3.1. Medicinally important plants

In the present study there are 80 medicinally important plant species belonging to 41 families were collected from the study area and their botanical name, family name, common or vernacular name, parts used, mode of administration and their medicinal properties were given in Table 1. Euphorbiaceae is represented by the highest number of species (8 species), followed by Fabaceae (6 species), Rubiaceae (5 species) Orchidaceae and Apocynaceae (4 species), Asclepiadaceae, Ebenaceae and Verbenaceae (3 species), 10 families were represented by 2 species and 23 families were represented by a single species. Out of the large variety of species available in the study area trees were the primary source of medicine

(45%), followed by shrub (20.50%), climber (15%), herbs (10%), epiphytes (6.25%) and grasses (1.25%).

### 3.2. Diseases cured by medicinal plants

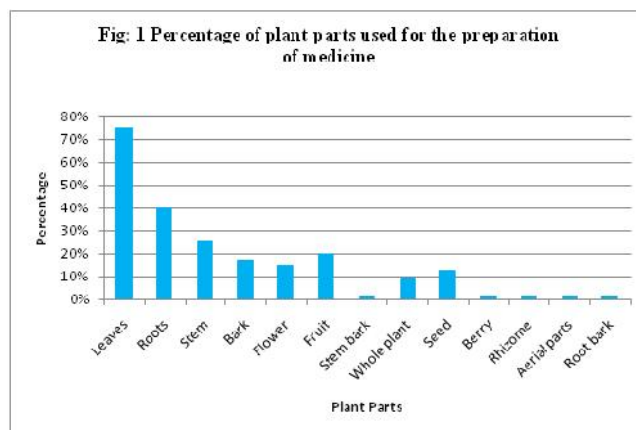
The tribals used various medicinal plants to remediate variety of diseases and ailments like diarrhea, diabetes, asthma, fever, jaundice, rheumatism, wounds, cuts, stomach pain, cough, cold, poisonous bites, body heat, body pain, bronchitis, dysentery, earache, eczema, eye troubles, hair growth, intestinal worms, jaundice, leprosy, menstrual trouble, piles, ulcer, tooth-ache, urinary troubles, vomit.

### 3.3. Parts of medicinal plants used

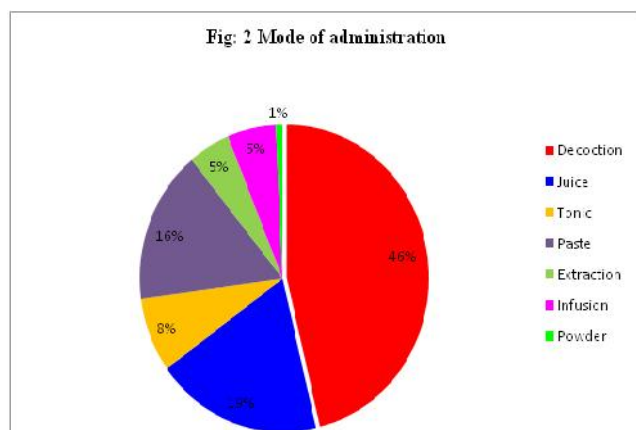
The diverse parts of the medicinal plants were used by the tribals based on their ability to cure diseases. The parts include leaves, root, bark, seed, fruit, flower, stem, etc. Leaves are highly used by the tribal peoples (75%) followed by root (40%), stem (25.75%), fruit (20%), bark (17.5%), flower (15%), seed (12.50%), whole plant (8.75%), aerial part, rhizome, root bark, stem bark and berry (1.25%) (Fig: 1).

### 3.4. Mode of medicine preparation from the medicinal plant parts

The tribals used these medicinal plants in the form of juice, paste, powder, extract, decoction and cooked or raw forms. Decoction is the maximum used from by the tribal peoples (73.75%) followed by juice (30%), paste (25.75%), tonic (12.50%), infusion (8.75%), extraction (7.50%) and powder (1.25%) (Fig: 2).



**Figure 1**



**Figure 2**

**Table 1:** The list of traditionally used medicinal plants in Pillur beat with their Botanical name/ family name/common name/ parts used / Medicinal uses and their mode of administration

S.N	Botanical Name	Habit	Family Name	Local Name	Parts used	Medicinal Usage	Mode of Administration
1.	<i>Acacia senegal</i> (L.) Willd. (Houtt.)	Tree	Mimosaceae	Cinkay, incakkai	Root, leaves, stem	Cough, diarrhea, dysentery, haemorrhage	Decoction, infusion
2.	<i>Aerides crispum</i> , Lindl.	Epiphyte	Orchidaceae	Kantankuli	Roots and leaves	Fever, Rheumatism	Decoction
3.	<i>Aganosoma cymosa</i> , G.Don.	Climber	Apocynaceae	Sellakkodi, Manimalaankodi	Whole plant	Anthelmintic, emetic, bronchitis, ophthalmia	Decoction
4.	<i>Aglaia elaeagnoidea</i> , (A. Juss.)Benth.	Tree	Meliaceae	Chokla, Chokkala	Fruits, seeds	Astringent, anti-diarrheal, skin diseases painful urination	Tonic, paste
5.	<i>Allophylus serratus</i> , Radlk.	Shrub	Sapindaceae	Siruvalli, perukudikkai	Leaves, seed, flower, root	Anti inflammatory, Carminative drug, fractured bone, wound healing, ulcer, gastrointestinal disorder, dyspepsia, diarrhea	Juice, paste, decoction
6.	<i>Alternanthera dentata</i> , Forssk.	Herb	Amarantaceae		Leaves, stem	Inflammatory, analgesic effect	Decoction
7.	<i>Alysicarpus vaginalis</i> , Dc.	Herb	Fabaceae	Nilaorila	Whole plant	Ascaris, diarrhea	Tonic, Paste
8.	<i>Anogeissus latifolia</i> , Wall.	Tree	Combretaceae	Namai, vekkali	Flowers, fruits	Diabetes, diarrhea, dysentery	Decoction, juice
9.	<i>Arundo donax</i> , L.f.	Large perennial grass	Poaceae	Korukkai, velam	Rhizome	Emollient, diuretic, stimulate menstruation	Decoction
10.	<i>Asclepias curassavica</i> , L.	Shrub	Asclepiadaceae	Neerpoo	Root, whole plant	Pain, ring worm	Paste
11.	<i>Bauhinia racemosa</i> , Lam.	Tree	Fabaceae	Atti, vellaimantarai	Flowers, fruit, root, leaves, bark, bud	Cough, Abdominal diseases, Anorexia, ascaris	Juice, decoction
12.	<i>Belpharis maderaspatensis</i> , L. Heyne ex Roth.	Herb	Acanthaceae	Naalilai naagam, Naathirapundu, Elumpuotti	Leaves, roots	Asthma, throat troubles, dropsy swellings, oedema, gout	Juice, infusion
13.	<i>Bischofia javanica</i> , Bl.	Tree	Euphorbiaceae	Thondi	Bark, leaves	Antiulcer, anthelmintic, Anti dysenteric activities	Decoction

14.	<i>Blumea membranacea</i> , Dc.	Herb	Asteraceae		Leaves, root	Wound healing, skin diseases	Decoction
15.	<i>Borreria hispida</i> , L.	Shrub	Rubiaceae	Karumpanai	Leaves, stem	Astringent, haemorrhoids	Decoction
16.	<i>Cadaba fruticosa</i> , (L.) Druce.	Shrub	Capparidaceae	Vizhuthi, adamorinika, chikondai	Leaves,	Dysentery, diarrhea, body pain, poisonous bites	Juice
17.	<i>Canthium umbellatum</i> , W.	Tree	Rubiaceae	Nallamandharam	Leaves, root	Diabetes	Decoction, juice
18.	<i>Capparis umbellata</i> , R. Br.	Thorny shrub	Capparidaceae	Kalmulayan	Roots, stem, leaves	Dysentery, fever	Paste, juice
19.	<i>Caralluma umbellata</i> , Haw.	Herb	Asclepiadaceae	Eluman, elumanpuli	Stem	Stomach disorder, abdominal pain, obesity, diabetes, ulcer problems	Juice
20.	<i>Cassia javanica</i> , L.	Tree	Caesalpinaceae	Konari	Seeds, bark	Laxative, antipyretics, fever, emesis	Decoction
21.	<i>Catunaregam spinosa</i> , Thunb.	Small tree	Rubiaceae	Madkarai	Fruits, leaves	Nauseant, expectorant, anthelmintic, abortifacient	Decoction, juice
22.	<i>Cayratia pedata</i> , Juss.	Climbing shrub	Vitaceae	Kattuperandai, kitamatti, tiripatakam	Leaves, whole plant	Astringents, refringents, antiarthritis activity	Extraction, decoction
23.	<i>Celtis tetrandra</i> , Roxb.	Tree	Ulmaceae	Ada, kona	Fruit, seed	Indigestion	Juice
24.	<i>Clerodendron phlomoides</i> , Willd.	Small tree	Verbenaceae	Taluddai, tazhutazhai	Root, leaves	Syphilitic complaints, gonorrhea, stomach troubles, Swelling in cattle	Tonic, juice, decoction
25.	<i>Combretum albidum</i> , G.Don.	A large deciduous climber	Combretaceae	Verragay, odaikodi, vennangukodi	Leaves, fruit, stem bark	Peptic ulcer, diarrhea, dysentery jaundice and skin diseases	Paste, decoction, juice
26.	<i>Commiphora pubescens</i> , Engl.	Tree	Burseraceae	Kodikiluval	Fruit, leaves	Anti inflammatory, astringent, stomach ache	Decoction, juice
27.	<i>Cyanotis wightii</i> , Cl.	Herb	Commelinaceae		Root,	Cough, diarrhea, dysentery, fever, indigestion	Decoction, tonic, paste
28.	<i>Cymbidium aloifolium</i> , Hk. f.	Epiphyte	Orchidaceae	Konkani, sonu	Leaves, root, seeds	Ear ache, cut, wounds, joining fractured bones, boils, fever, chronic illness	Decoction, paste
29.	<i>Dalbergia lanceolaria</i> , L. f.	Tree	Fabaceae	Erigai, kattuppachalai	Seeds, root, leaves	Mild laxatives, inflammatory	Tonic, juice
30.	<i>Dalbergia paniculata</i> , Roxb.	Tree	Fabaceae	Panivaagai, velluruval, arivaagai	Leaves, stem, bark, root	Fever, cough, cold, skin diseases	Decoction, paste
31.	<i>Dendrophthoe falcata</i> , L. f.	Epiphyte	Loranthaceae	Pulluri, pulluruvi, uchi	Leaves, flowers	Wound healing, antimicrobial, hepato	Decoction, extraction

						protective, pulmonary tuberculosis, asthma, menstrual disorders, constipation, insanity, diarrhea, dysentery, arthritis, leucorrhoea, rheumatism, skin diseases, impotency, wound swelling, paralysis, ulcers, haemorrhage, miscarriage, kidney and gall bladder stone.	
32.	<i>Derris eualata, Bedd.</i>	Climber	Fabaceae		Leaves, stem, flower	Rheumatism, anti-inflammatory	Decoction
33.	<i>Dioscorea bulbifera, L.</i>	Climber	Dioscoreaceae	Kaattu-k-kaay-valli	Leaves, root	Diarrhea	Decoction
34.	<i>Dioscorea hirsuta, Blume.</i>	Climber	Dioscoreaceae	pulidumpa	Leaves, stem,	Diuretic, rheumatism, snake bites	Decoction, juice, paste
35.	<i>Diospyros buxifolia, (Blume.)Hiern.</i>	Tree	Ebenaceae	China thuvarei, irambali, irampalai	Leaves, stem, flower	Anti viral, anti HIV, indigestion	Decoction
36.	<i>Diospyros chloroxylon, Roxb.</i>	Tree	Ebenaceae		Bark, stem, leaves	Rheumatism, swelling, joint pain, wound healing	Decoction
37.	<i>Diospyros zeylanica, Kostern.</i>	Shrub	Ebenaceae		Leaves	Anti fugal, fever	Decoction
38.	<i>Drypetes roxburghii, (Wall)Hurus</i>	Tree	Euphorbiaceae	Irukoli	Bark, leaves	Joint pain, rheumatism,	Decoction, infusion
39.	<i>Erythroxylon obtusifolium, Hock.f.</i>	Shrub	Erythroxylaceae		Leaves, stem, root	Fever, cough	Decoction
40.	<i>Ficus tomentosa, Roxb.</i>	Tree	Moraceae		Leaves, bark,	Poultice, boils, cuts and wound	Paste, crushed leaves
41.	<i>Furcraea foetida, (L.)Haw.</i>	Shrub	Agavaceae	Pachchai, kaththaazhai	Root, flower, leaves	Back pain, syphilis, febrifuge, obstinate cold	Infusion, decoction, paste
42.	<i>Gardenia gummifera, L. f.</i>	Tree	Rubiaceae	Kambil, vellapaavatlaa	Root, fruit, leaves, whole plant	Carminative, diaphoretic, peripheral and central analgesic	Decoction
43.	<i>Givotia moluccana, (L.) Sreem.</i>	Tree	Euphorbiaceae	Puttali, ventali	Fruit, stem, flower, leaves	Rheumatism, skin diseases, Dandruff, wound healing	Decoction, paste
44.	<i>Grewia orbiculata, Rottl.</i>	Shrub	Tiliaceae	Ney-c-citti	Bark, root	Skin diseases, wound healing	Paste, juice

45.	<i>Grewia umbellifera</i> , Bedd.	Tree	Tiliaceae		Leaves, stem,	Pain, inflammatory, diuretic, cardiotoxicity and stress	Decoction, juice
46.	<i>Gymnosporia Montana</i> , Benth.	shrub	Celastraceae	Kattangi	Leaves, stem,	Anti cancer, ulcer, wound healing	Paste, decoction
47.	<i>Harpullia arborea</i> , (Blanco) Radlk.	Tree	Sapindaceae	Neykkottai neykkottan	Bark, fruit, seeds,	Leech bites, rheumatism, digestive problems	Extraction
48.	<i>Heterostemma tanjorensis</i> , W. & A.	Climber	Apocynaceae	Palakeerai	Leaves	Anti viral, anti bacterial, skin diseases, fever	Paste, tonic, infusion
49.	<i>Hiptage benghalensis</i> , (L.) Kurz.	Shrub	Malpighiaceae	Atimukta	Bark, leaves, flower	Wound healing, ulcer, cough, asthma	Decoction
50.	<i>Homonoia riparia</i> , Lour.	Shrub	Euphorbiaceae	Kattalri	Root	Laxative, diuretic, piles, stone in the gall bladder, gonorrhea, syphilis and thirst	Decoction
51.	<i>Ichnocarpus frutescens</i> , R.Br.	Climber	Apocynaceae	Paravalli, udargodi, udarkkoti	Whole plant	Atrophy, bleeding gums, cough, dysentery, night blindness, tuberculosis, abdominal and glandular tumors	Extraction, decoction
52.	<i>Leucas chinensis</i> , R.Br.	Herb	Lamiaceae		Leaves, root, stem	Cough, cold, diarrhea, inflammatory, skin diseases	Decoction
53.	<i>Mallotus philippinensis</i> , M. Arg.	Tree	Euphorbiaceae	Kapli, kalupatti	Root, whole plant	Purgative, scabies, cutaneous troubles	Juice, decoction
54.	<i>Mallotus stenanthus</i> , M. Arg. A.	Tree	Euphorbiaceae	Karuvallichi	Leaves, fruits	Fever, wound healing	decoction
55.	<i>Manilkara hexandra</i> , Roxb.	Tree	Sapotaceae	Ulakkai-p-palai	Bark, fruits	Anorexia, bronchitis, asthma	Decoction
56.	<i>Melochia corchorifolia</i> , L.	Herb	Malvaceae	Pinnakkukkirai	Leaves, roots	Urinary disorder, swelling, poisonous bites, dysentery	Decoction, juice
57.	<i>Microtropis ramiflora</i> , W.	Tree	Celastraceae		Leaves, stem	Liver diseases, Wound healing, kidney disorders	Infusion
58.	<i>Morinda umbellata</i> , L.	Climber	Rubiaceae	Kundalchurukki	Leaves, fruits	Cold, diabetes, high blood pressure, depression and anxiety	Juice
59.	<i>Mundulea sericea</i> , (Willd.)A. Chev.	Small tree	Fabaceae	Vellai, venpuracamaram	Leaves, roots	Poisonous bites, emetic, infertility	Infusion, paste
60.	<i>Murraya paniculata</i> , (L.)Jack.	Tree	Rutaceae	Arruppancu, cimaikkonci	Leaves, flowers, bark, stem	Astringent, dropsy, diarrhea, dysentery, tooth ache, poisonous bites	Decoction, tonic, paste
61.	<i>Naravelia zeylanica</i> , Dc.	Climber	Ranunculaceae	Kattuseekkaikodi,	Leaves, root,	Head ache, tooth ache, ulcer,	Paste, tonic,

				vathomkolli, neendavalli	flowers	skin diseases, fever	decoction
62.	<i>Orthosiphon pallidus</i> , Royle.	Shrub	Lamiaceae	Pale, jyoti	Leaves, root, seeds	Fever, wound healing ulcer	Infusion
63.	<i>Phyllanthus polyphyllus</i> , Willd.	Tree	Euphorbiaceae	Arunelli	Leaves, seeds, fruits, stem, bark	Jaundice, gonorrhea, diabetes	Juice, decoction
64.	<i>Pleurospermum alatum</i> , Wight & Arn.	Small tree	Rutaceae	Kurnthumullthalai, kurnthumal thazhai	Leaves, stem	Wound healing, skin diseases	Paste
65.	<i>Polyalthia korinti</i> , Hk. f. & T.	Shrub	Annonaceae	Sirunetti, uluvintai	Leaves, stem,	Fever, skin diseases, diabetes	Decoction
66.	<i>Polygonum hydropiper</i> , L.	Herb	Polygonaceae		Leaves, flowers	Cholera, respiratory ailments, Stop excessive bleeding	Decoction
67.	<i>Premna tomentosa</i> , Willd.	Tree	Verbenaceae	Malai thekku, podaganari	Bark, leaves, root	Diarrhea, rheumatism, liver diseases, diuretic	Decoction
68.	<i>Reissantha indica</i> , (Willd.) N. Halle.	Climber	Hippocrateaceae	Odangod	Root bark, stem, leaves	Respiratory troubles, febrifuge, sores and wounds	Powder
69.	<i>Rhus mysorensis</i> , Heyne.	Tree	Anacardiaceae	Chippamaram, kiluvai	neyyi Fruit, leaf	Dysentery, itching, diarrhea, stomatitis, rash, allergy, diabetesfamine periods, HSV <sub>2</sub> infection and antifertility	Decoction, juice, extraction
70.	<i>Sarcostemma viminale</i> , W.	Climber	Asclepiadaceae	Kodikalli	Aerial parts	Purgative, and emetic	Decoction
71.	<i>Solanum anguivi</i> , Lam.	Shrub	Solanaceae	Katheli-badhil	Fruit, leaves	Diabetes, tooth ache, vomitting	Decoction
72.	<i>Stereospermum colais</i> , (Buch.Ham. ex Dillw.)	Tree	Bignoniaceae	Ambu, ambuvaginim kural, padiri	Stem bark, roots, flowers, leaves, seeds	Abdominal diseases	Decoction, extraction
73.	<i>Strobilanthes canarius</i> , Bedd.	Climber	Acanthaceae	Neelakkurinji	Leaves, root	Chronic ulcer, cough, fever	Decoction, tonic
74.	<i>Trewia nudiflora</i> , L.	Tree	Euphorbiaceae	Aattharasu, puvaracu	arru-p- Leaves, stem	Wound healing, skin diseases	Decoction
75.	<i>Vallis solanacea</i> , O. Kze.	Tree	Apocynaceae		Root, bark	Analgesic, anti diarrheal, dysentery	Tonic, paste
76.	<i>Vanda tessellata</i> , Roxb.	Epiphyte	Orchidaceae	Kantanakuli	Roots, leaves	Fever, rheumatism	Decoction
77.	<i>Vanda testacea</i> , Rchb.	Epiphyte	Orchidaceae		Leaves,	Anti viral, anti cancer, ear	Juice



78.	<i>Ventillago maderaspatana, Gaertn.</i>	Climber	Rhamnaceae	Surulbataaikkot, vempadam	Stem, leaves	ache Fever, skin diseases, leprosy, scabies, prurities, diabetes, digestive, stomach ache	Decoction, paste
79.	<i>Viscum album, L.</i>	Epiphyte	Loranthaceae		Leaves, stem, berries	Breast cancer, high blood pressure	Decoction, juice,
80.	<i>Vitex altissima, L.f.</i>	Tree	Verbenaceae	Mayilainochi	Leaves, root	Inflammation, wounds, ulcer, allergy, eczema, pruritus, stomatitis, emaciation	Paste, decoction

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## Discussion

A total of 80 medicinal plants were observed and listed in this study. Out of the large variety of species available in the study area the family Euphorbiaceae is most speciose family followed by Fabaceae, Rubiaceae, Orchidaceae and Apocynaceae, Asclepiadaceae, Ebenaceae and Verbenaceae. Silambarasan and Ayyanar [18] stated that Leguminosae and Asteraceae are dominant families used by the tribal people in Palamalai region. Trees were the primary source of medicine, followed by shrubs, climbers, herbs, epiphytes and grasses. The recurrent use of trees among the indigenous communities is a result of wealth of trees in their environments. [19, 20, 21]

Analysis of the plant parts used showed that leaves are the most widely used plant part, followed by roots. Likewise, most of the tribal communities around the World using leaves for the preparation of herbal medicines, [22,23] because of the availability of leaves throughout the year and can be easily collected from the forests. [24] In Tamilnadu too, Irular tribals in Nilgiri hills, [25] Kadars, Malasars and Muthuvan tribals in Coimbatore district, [24] Paliyar tribals in Madurai district, [27] Malayali tribals in Salem district [18] were also utilized mostly leaves for preparation of herbal formulations to treat various diseases. Medicinal preparation from raw material of the plants is one of the important method in herbal therapy. [28] The informants in the present survey were practicing seven different types of preparation methods. In preparing plants into herbal medicine, the plant parts are turned in the form of decoction followed by juice, paste, extraction, infusion, tonic and powder from freshly collected plant parts. The same observation was also reported by earlier investigators. [29, 20, 21]. A total of more than 94 ailments were reported in the present study, among the different ailments, asthma, cold, cough, bronchitis, ulcer and stomach problem, fever, inflammation diarrhoea and dysentery, skin diseases, wound healing, rheumatism, joint pain and arthritis snake bites, cancer, anti fungal, anti bacterial and anti microbial were considered as common ailments and maximum number of medicinal plant species were used against these ailments. Similar observation, where maximum number of species used for treating fever, cuts and wounds were reported. [30,31]

## 4. Conclusion

This is the first ethnobotanical research in Pillur beat villages. The present investigation revealed that, the study area has vast diversity of medicinal plants which were used for the primary healthcare system by tribal people. They provide medical practice among themselves and the patients approaching them with their knowledge of medicinal flora in their environs for the treatment of different type of diseases. But very less number of professional healers was identified in the study area revealed preserving this traditional knowledge before it vanishing from this generation, since the present day younger generation of this community is not interested to learn and follow these traditional practices. The efficacy and safety of commonly used ethnomedicinal plants need to be evaluated for

detailed phytochemical and pharmacological studies especially the plants with high trade value should be given priority to carry out bioassay and toxicity studies.

## Conflict of interest statement

We declare that we have no conflict of interest

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