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ETHNOMEDICINAL KNOWLEDGE OF TRIBE-KATTUNAYAKANS IN NILAMBUR FORESTS OF MALAPPURAM DISTRICT, KERALA, INDIA

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ABSTRACT

The present study on the *Kattunayakans* tribes of Nilambure forests, Malappuram district of Kerala reveals that, there are about 90 potential medicinal plant species spreading over 47 families were utilized by these tribes to cure various ailments. The present study also concluded that, *Kattunayakans* are the one of the major tribal group inhabited in the Nilambure region. Moreover they have best knowledge about the uses of a good number of plant species for curing various ailments as well as their nutritional requirements.

Key words: Ethnomedicinal Knowledge, *Kattunayakans*, Nilambur, Kerala.

INTRODUCTION

India has one of the richest medicinal plant culture in the world. In recent years, use of ethnobotanical information in medicinal plant research has gained considerable attention in segments of the scientific community [1]. All parts of the plants, including leaves, bark, fruits, flowers, seeds are used for various medicinal preparations [2]. A large number of plants used in indigenous practices have been discovered through ethnobotanical studies [3]. The tribals have developed their own traditional ways of diagnosis to treat various ailments by trial and errors [4]. The traditional medicinal knowledge of plants and their use by indigenous culture are not only useful for conservation of cultural tradition, but also for community health care and drug development in the present and future [5]. The ethnobotanical and ethnomedicinal studies have great significance in the collection of traditional knowledge, preparation of recorded data and in conservation of endangered medicinal plant species [6].

Around the world various local communities possess knowledge, innovations and peculiar practices developed from experience gained over centuries and adapted to the local culture and environment, such knowledge is categorized as traditional knowledge. The areas rich in biodiversity are also an abode of diverse ethnic groups possessing a valuable reservoir of indigenous knowledge system (IKS) acquired and developed during a long period of time [7].

MATERIALS AND METHODS

Study Area

Nilambur (11° 26' - 11° 9' N latitude and 75° 48' - 76° 33' longitude) forms the Eastern sector of Malappuram district in Kerala state (Fig.1) and includes a major range in the Southern Western Ghats, rich in biodiversity and tribal population. It is bordered by the undulating midlands on the West, Nilgiri on the East, Silent Valley National park of Palghat District on the

South and Wayanad forests on the North. It extends to an area of about 150 sq km [8].

Documentation

Systematic field trips were conducted throughout the *Kattunayakans* settlements of Nilambur forests of Southern Western Ghats of Kerala during December 2013 - April 2014. The potential medicinal plants which are utilized by these tribes were documented. The documentation such traditional knowledge (TK) was done with the help of tribal people particularly the old men and women were interviewed whose empirical knowledge was respected by everyone (Fig. 2). The identification of these medicinal plants was done with the help of available Floras and Literature [9-11]. The specimens were used for preparing herbarium preparation as per standard procedure [12]. The voucher specimens were deposited in the Herbaria of Department of Botany, Kongunadu Arts and Science College, Coimbatore.

RESULT AND DISCUSION

The present study documented 90 potential medicinal plant species spreading over 47 families, which are utilized by *Kattunayaka* tribes of Malappuram district of Kerala for curing various ailments. Among these 90 species four species from pteridophytes and remaining from angiosperms (Table-1). Out of 47 medicinal plant families represented, the first dominant family is the Asteraceae in which 6 species followed by Acanthaceae, Euphorbiaceae and Orchidaceae with 4 species each. The other dominant families such as Fabaceae, Lamiaceae and Verbenaceae represented with 3 species respectively (Fig. 3).

Life forms of documented medicinal plant species reveals that, herbs are dominant with 40% followed by shrubs (25%), trees (18%), climbers (12%), ferns (4%) and epiphytes (1%) (Fig. 4). They use various parts of such plants like leaves, roots, rhizome, inflorescence, fruits and seeds etc. for the preparation of different medicinal formulations. Among these, leaves are most used ones (42%), followed by roots (16%), whole plants (13%), barks (4%) bulbs and seeds (2%), stem, rhizome and latex (1%) (Fig. 5).

The present study noticed that, single disease can be cured with infusions of more than one plant, similarly, the single plant can be utilized to cure more than one diseases. The plants like *Borassus flabellifer*, *Calotropis gigantea*, *Cissus quadrangularis*, *Pouzolzia zeylanica*, *Vanda testacea* are used for ear diseases. Some species like *Aristolochia indica*, *Datura metal*, *Helicteres isora*, *Helminthostachys zeylanica*, *Rauvolfia tetraphylla*, *Rauvolfia serpentina*, *Malaxis rheedii* etc. are effectively utilized for snake poison. While the species like *Erythrina variegata* used for the treatment of body pain and also for cuts and wounds. More over the species like *Asparagus racemosus* used for stomach pain and menstrual disorder,

Elephantopus scaber used for digestion problems and ring worm infection and *Sphaeranthus indicus* used for cough and stomach pain.

The studies like the ethnobotanical observation on tribe *Arnatans* of Nilambur region by Thomas *et al.* [13], reveals that, They utilize 30 potential medicinal plants belonging to 28- families were documented. The various parts of these plants *viz.*, leaves, bark, roots and rhizome *etc.* were used for both internal and external applications for the treatment of various ailments in their daily life. Similarly They also noticed that, there are about 20 species of medicinal plants which are utilized for the treatment of diarrhoea and dysentery by these tribals. The present study concluded that, *Arnatans* are the one of the major tribal group inhabited in the Nilambure Taluk of Malappuram district, Kerala. They have best knowledge about the uses of a good number of plant species for curing various ailments [14].

An ethnobotanical survey was carried out among the Paniyars tribes of Nilambur forest division of Malappuram district of Western Ghats in Kerala by Thomas *et al.* [15]. They identified 30- plants are used for the ethno veterinary practices to maintain their live stock population. It is observed that the plant utilized in ethnoveterinary practices varies with the availability of plants. In addition to this they also utilize 23 plant species for the treatment of diabetic problems. More over Paniyars tribes have a strong propensity of keeping their traditional knowledge and techniques secret [16].

About the Tribe- *Kattunayakans*

The *Kattunayakans* community is found in the interior forests of Nilambur area of Malappuram district of Kerala. Their name *Kattunayakans* denotes 'kings of the Jungle', They are also known as "Ten kuramar" because they are actively involved in the collection honey and its products from the forests. They worship animals, birds, trees, rock and snakes. *Kattunaickans* are expert in making baskets with canes and bamboos. They have a good folk culture; they are experts in the use of musical instruments, both men and women sing well during folk ceremonies. They also interact with other communities of the region. They are firm believers in black magic and also worship their ancestors along with other deities in Hindu religion. The tribes have well developed system of traditional knowledge and practices. They also knows about number of rare medicinal plants and their applications.

This traditional knowledge can orally transfer to the next generation within the tribe. Now days the traditional medication practices are reduced gradually due to the invasion of modern medicine. Hence the proper documentation and preservation of traditional skills and technology of medicinal plants is needed urgently for the conservation of these potential plants.

Figure 1. A. Map of India Showing Kerala State



Figure 1. B. Map of Malappuram district showing Nilambur region



Figure 2. A. Panoramic views of the study area



Figure 2. B. Documentation of Traditional Knowledge by Interviewing the Tribal informant

Figure 3. Analysis of dominant medicinal plant families

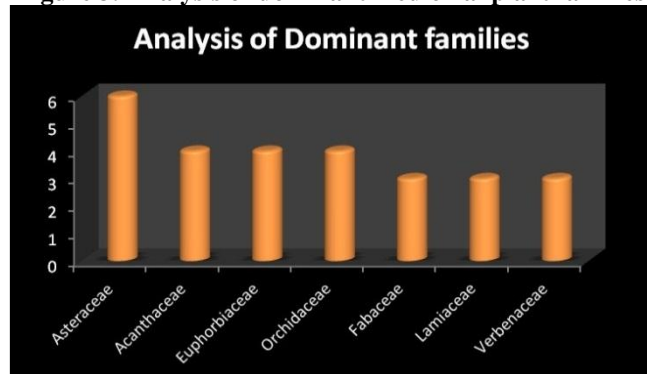


Figure 4. Life form analysis of medicinal plants in the study area

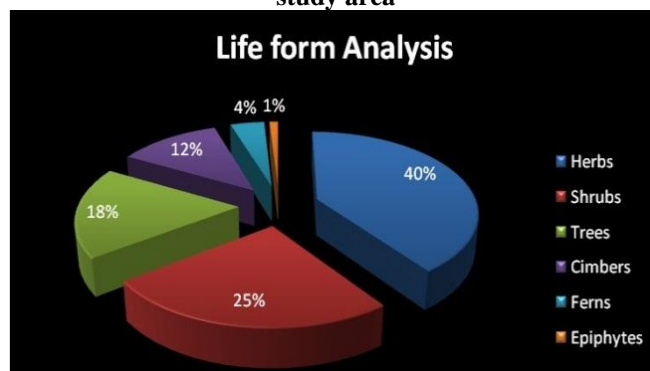


Figure 5. Analysis of plant part(s) used for making various herbal formulations

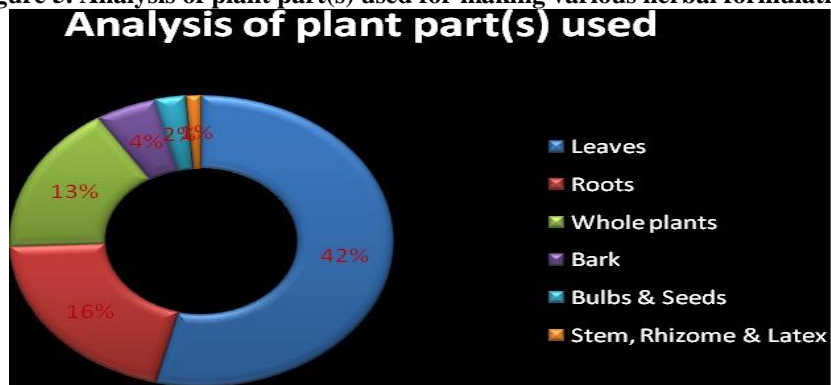


Plate 1.



A) *Artemisia nilagarica* (Clarke) Pamp.



B) *Coix lacryma-Jobi* L.



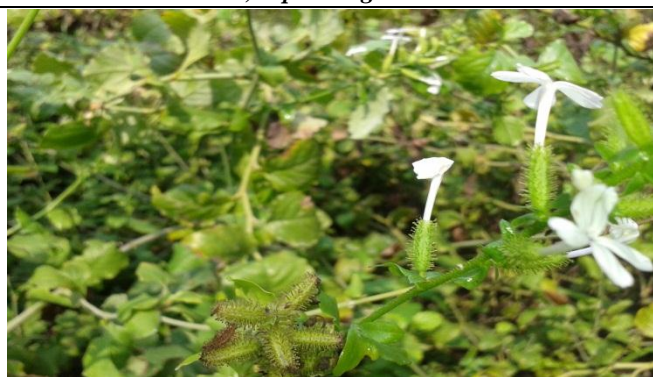
C) *Ensete superba* (Roxb.) Chees.



D) *Piper longum* L.



E) *Plumbago indica* L.



F) *Plumbago zeylanica* L.

Plate 2



A) *Malaxis rheedii* Sw.



B) *Rauvolfia tetraphylla* L.



C) *Rotula aquatica* Lour.



D) *Tiliacora acuminata* (Poir.) Miers. ex Hook.f.



E) *Helminthostachys zeylanica* L.



F) *Hemionitis arifolia* (Burm.) T. Moore

Table 1. List of Ethnomedicinal plants utilized by tribe *Kattunayakans* of Nilambur forests, kerala

S.No	Botanical Name	Family	Vernacular Name	Habit	Parts Used	Ailments	Mode of administration
1.	<i>Abrus precatorius</i> L.	Fabaceae	Kunni	Climber	Leaves	Inflammation	Leaves are pasted with <i>Curcuma longa</i> and salt then it is applied externally for inflammatory swellings.
2.	<i>Achyranthes aspera</i> L.	Amaranthaceae	Kadaladi	Herb	Leaves	Itching	Leaf paste applied externally against itching.
3.	<i>Aerva lanata</i> (L.) Juss. ex Schult.	Amaranthaceae	Cherula	Herb	Leaves	Headache.	Crushed leaves are made in to a paste and then it is applied over the forehead for headache.

4.	<i>Aristolochia indica</i> L.	Aristolochiaceae	Karalakam	Climber	Leaves	Poisonous bites	Leaf paste is used as anti-dot for poisonous bites.
5.	<i>Artemisia nilagarica</i> (Clarke) Pamp.	Asteraceae	Ramathulasi	Herb	Leaves	Fever	Leaves are boiled with water, ginger and pepper. The consumption this boiled solution is good for fever.
6.	<i>Artocarpus heterophyllus</i> Lam.	Moraceae	Plavu	Tree	Leaves	Rheumatism	Fall leaves are boiled with water and this water is used for bath to cure rheumatism.
7.	<i>Asclepias curassavica</i> L.	Asclepiadaceae	Thattupoovu	Herb	Latex	Leg sore	Latex of the plant is poured in to the affected area to get relief.
8.	<i>Asparagus racemosus</i> Willd.	Asparagaceae	Sathavari	Climbing shrub	Tuber	Stomach pain & Menstrual disorder	Cooked tubers are eaten for stomach pain. Similarly lehyam prepared from these tubers also used for white discharge in women.
9.	<i>Biophytum sensitivum</i> (L.) DC.	Oxalidaceae	Mukkuti	Herb	Whole plant	Eye diseases	Juice taken from crushed plant parts is applied for eye itching and other eye problems.
10.	<i>Borassus flabellifer</i> L.	Arecaceae	Karimpana	Tree	Leaves petiole.	Ear pain	The juice is extracted from the heated leaves and petiole. This juice is applied for earache.
11.	<i>Briedelia scandens</i> (Roxb.) Willd.	Euphorbiaceae	Cherupanachi	Scandent shrub	Leaves	Throat pain	Gargling of leaf decoction is good for throat pain.
12.	<i>Calotropis gigantea</i> (L.) R.Br.	Asclepiadaceae	Erikku	Shrub	Leaves	Earache	The juice prepared from the heated leaves of the plant is applied in to ear for earache.
13.	<i>Calycopteris floribunda</i> Lam.	Combretaceae	Pullanni	Woody climber	Seeds	Inflammation	The oil is extracted from dried seeds are applied externally for inflammatory swellings.
14.	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Uzhinja	Herb	Areal part	Stomach pain & Dandruff	Plant powder is mixed with honey and it is used against dysentery. Plant juice boiled with coconut oil and applied against dandruff.
15.	<i>Carica papaya</i> L.	Caricaceae	Pappaya	Tree	Latex	Crumpled nail	Latex is poured in to the affected area.
16.	<i>Centella asiatica</i> (L.) Urban	Apiaceae	Mutthil	Herb	Whole plant	Memory	Consumption of whole plant juice can improves memory power.
17.	<i>Cissus quadrangularis</i> L.	Vitaceae	Changalamparanda	Scandent shrub	Stem	Earache	The juice obtained from the heated stem is used for earache.
18.	<i>Cleome viscosa</i> L.	Cleomaceae	Kattukaduku	Herb	Seeds	Leg sore	Dried seeds boiled with oil and applied externally on leg.
19.	<i>Coix lacryma-Jobi</i> L.	Poaceae	Konthamani	Herb	Roots	Menstrual disorders	Oral administration of root juice is used by women for menstrual disorders.
20.	<i>Costus speciosus</i> (Koenig) J.E. Smith	Zingiberaceae	Chanakkoova	Herb	Leaves	Diabetes	Young leaves are eaten for diabetes
21.	<i>Curculigo orchoides</i> Gaertn	Hypoxidaceae	Nilappana	Herb	Tuber	Blood purification	Crushed tubers are mixed with milk is used as blood purifier.
22.	<i>Cyclea peltata</i> (Lam.) Hook.f.	Menispermaceae	Padathaali	Climber	Leaves & Tuber.	Stomach pain & hair cleaner	Leaves crushed with water and it is applied over the hair as hair cleaner. Powder obtained from dried tubers are mixed with hot water. This solution is used for stomach pain.
23.	<i>Cynodon dactylon</i> (L.) Pres.	Poaceae	Karuka	Herb	Leaves	Menstrual disorders	Oral administration of leaf juice by ladies for late menstrual cycle.
24.	<i>Cyperus rotundus</i> L.	Cyperaceae	Muthanga	Herb	Tuber	Stomach problems	The juice obtained from the tuber is administered orally for various stomach problems.
25.	<i>Datura metal</i> L.	Solanaceae	Ummathu	Subshrub	Fruit	Snake poison	Fruit paste applied for snake poison.
26.	<i>Desmodium motorium</i> (Houtt.)	Fabaceae	Thozhukani	Sub shrub	Bark	Dysentery	The juice obtained from the bark is administered orally for

	Merr.						dysenteric problems.
27.	<i>Desmodium velutinum</i> (Willd.) DC.	Fabaceae	Orila	Sub shrub	Leaves	Stomach pain & vomiting	Decoction is prepared from leaves are used against vomiting as well as stomach pain.
28.	<i>Eclipta prostrata</i> L.	Asteraceae	Kayyunni	Herb	Whole plant	Hair tonic	Plant juice is used as hair tonic by women.
29.	<i>Elephantopus scaber</i> L.	Asteraceae	Aanachuvadi	Herb	Leaves & roots	Digestion problems & Ring worm infection	Consumption of leaf juice can reduce stomach pain. Crushed roots are also applied externally for ring worm infection.
30.	<i>Emilia sonchifolia</i> (L.) DC.	Asteraceae	Muyalcheviyan	Herb	Leaves	Cuts & wounds	Leaf juice is applied over cuts and wounds.
31.	<i>Ensete superba</i> (Roxb) Chees.	Musaceae	Kalluvazha	Herb	Fruits	Kidney stone	Raw fruits are eaten for kidney stone
32.	<i>Erythrina variegata</i> L.	Fabaceae	Murikku	Tree	Leaves & Bark	Body pain & Cuts and wounds	Leaves and bark is boiled with water and it is used for bath to get relief from body pain. Paste obtained from the bark is applied over cuts and wounds.
33.	<i>Hedyotis corymbosa</i> (L.) Lam.	Rubiaceae	Parpadakapullu	Herb	Areal part	Cough & Cold	Areal part of the plant is boiled with water and it is orally administered for cough and cold.
34.	<i>Helicteres isora</i> L.	Sterculiaceae	Edampiri-valampiri	Small tree	Roots	Snake bite	Root paste is used as anti-dot for snake bite.
35.	<i>Hemidesmus indicus</i> (L) R.Br.	Asclepiadaceae	Nannari	Herb	Root	Stomachache	Root juice is administered orally for stomach pain.
36.	<i>Hemigraphis colorata</i> (Blume) H.G. Hallier	Acanthaceae	Murikoodi	Herb	Leaves	Cuts & wounds.	The juice obtained from crushed leaves are applied externally for cuts and wounds.
37.	<i>Hibiscus sabdariffa</i> L.	Malvaceae	Pulivenda	Shrub	Leaves	Eczema	Leaf paste used against eczema.
38.	<i>Hydnocarpus pentandra</i> (Buch.-Ham.) Oken	Flacourtiaceae	Marotti	Tree	Seeds	Body pain	Oil extracted from the seeds are externally used for body pain.
39.	<i>Hyptis suaveolens</i> (L.) Poit.	Lamiaceae	Mukkala	Sub shrub	Areal part of plant.	Against pest of domestic animals	Plant parts used to make decoction and applied to animal body.
40.	<i>Indigofera tinctoria</i> L.	Fabaceae	Neelayamari	Sub shrub	Leaves	Lizard poison	Leaf paste with turmeric is applied externally for poisonous bites.
41.	<i>Impatiens clavicornu</i> L.	Balsaminaceae	Kallummapotty	Herb	Leaves & Stem	Skin irritation	Crushed plant part applied on skin.
42.	<i>Justicia adhatoda</i> L.	Acanthaceae	Adalodakam	Shrub	Leaves	Cough & cold	Oral administration of leaf juice is used for cough and cold.
43.	<i>Justicia gendarussa</i> Burm.f.	Acanthaceae	Vathamkolli	Shrub	Leaves	Cough	Decoction is prepared from the leaves are used for cough.
44.	<i>Kaempferia rotunda</i> L.	Zingiberaceae	Chengazhinir-kizhangu	Herb	Rhizome	Stomach pain	Rhizome juice is administered orally for stomach pain.
45.	<i>Leucas zeylanica</i> (L.) R.Br.	Lamiaceae	Thumba	Herb	Leaves	Cold & cough	Crushed leaves are squeezed for getting juice and this juice is directly applied to the nose to get relief from cold and cough.
46.	<i>Malaxis rheedii</i> Sw.	Orchidaceae	Kingini	Herb	Rhizome	Snake poison	Dried powder form of bulb used externally for snake poison.
47.	<i>Mimosa pudica</i> L.	Mimosaceae	Thottavadi	Herb	Leaves	Cuts & wounds	Juice obtained from crushed leaves are applied over cuts and wounds.
48.	<i>Mukia maderaspatana</i> (L.) Roem.	Cucurbitaceae	Mukkapeeram	Climber	Whole plant	Body pain	The oil is extracted from dried plant parts and it is used against body pain.

49.	<i>Mussaenda frondosa</i> L.	Rubiaceae	Vellila	Shrub	Leaves	Eye itching.	Leaves are pasted with <i>Curcuma longa</i> and applied above the closed eye for some time to cure eye itching.
50.	<i>Naregamia alata</i> Wight & Arn.	Rutaceae	Nilanaragam	Herb	Whole plant	Inflammation	Paste form of the plant is applied externally for breast swelling of cow after delivery.
51.	<i>Nervilia aragona</i> Comm. ex Gaudich.	Orchidaceae	Nilathamara	Herb	Bulb	Urinary diseases	Consumption of tuber juice can cure urinary diseases.
52.	<i>Nervilia Plicata</i> (Andr.) Schltr.	Orchidaceae	Orilathamara	Herb	Bulb	Urinary diseases	Consumption of tuber juice can cure urinary diseases.
53.	<i>Orthosiphon aristatus</i> (Blume) Miq.	Lamiaceae	Poochameesa	Herb	Leaves & Roots	Cough & Cold	Dried leaves and root are made in to a powder. The consumption of this powder along with hot water can reduce cold and cough.
54.	<i>Oxalis corniculata</i> L.	Oxalidaceae	Puliyarila	Herb	Whole plant	Fever & Dysentery	Whole plant decoction is used to cure fever and dysentery.
55.	<i>Pancratium triflorum</i> Roxb.	Amaryllidaceae	Kattulli	Herb	Bulb	Leg sore	Heated bulbs are placed near the affected area.
56.	<i>Pandanus odoratissimus</i> L.f.	Arecaceae	Kaitha	Shrub	Inflorescence	Mosquito repellent	Crushed inflorescences are mixed with water and sprayed over mosquito affected areas.
57.	<i>Phyllanthus amarus</i> Schum. & Thonn.	Euphorbiaceae	Keezharnelli	Herb	Whole plant	Stomach pain	Whole plant is boiled with water and it is taken orally to cure stomach pain.
58.	<i>Physalis angulata</i> L.	Solanaceae	Njotanga	Herb	Fruits	Stomach problems	Fruit juice is taken for various stomach problems.
59.	<i>Piper longum</i> L.	Piperaceae	Thippalli	Scandent shrub	Fruit	Toothache	Chewing of crushed fruits can reduce toothache.
60.	<i>Plumbago indica</i> L.	Plumbaginaceae	Chethikoduveli.	Shrub	Roots	Cuts & wounds	Root paste applied externally for cuts and wounds.
61.	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Vellakkoduveli	Shrub	Root	Inflammation	Root paste applied externally for inflammatory swellings.
62.	<i>Pongamia pinnata</i> (L.) Pierre	Fabaceae	Ungu	Tree	Leaves & Bark	Mosquito repellent	Crushed leaves and barks are mixed with water and sprayed over mosquito affected areas.
63.	<i>Pouzolzia zeylanica</i> (L.) Benn.	Urticaceae	Kallurukki	Herb	Leaves	Ear pain	Leaf juice is applied to ear for ear pain.
64.	<i>Pseudarthria viscida</i> (L.) Wight & Arn.	Fabaceae	Moovila	Sub shrub	Leaves	Bleeding	Oral administration of leaf paste is used for internal bleeding.
65.	<i>Pterolobium hexapetalum</i> (Roth) Sant. & Wagh	Caesalpiniaceae	Koorimullu	Climber	Flowers	Head ache	Crushed flowers are applied over forehead to get relief from headache.
66.	<i>Rauvolfia tetraphylla</i> L.	Apocynaceae	Pambumkolli	Shrub	Roots	Snake poison	Root paste with <i>Curcuma longa</i> is used as anti-dote for snake bite.
67.	<i>Rauvolfia serpentina</i> (L.) Benth ex Kurz.	Apocynaceae	Amalpori	Herb	Roots	Snake bite	Root decoction is used as anti-dot for snake bite.
68.	<i>Ricinus communis</i> L.	Euphorbiaceae	Aavanakku	Shrub	Leaves	Body Pain	Leaves of the plant along with <i>Vitex negundo</i> is boiled with water and is used to take bath to cure body pain.
69.	<i>Rotula aquatica</i> Lour.	Boraginaceae	Kallurvanchi	Shrub	Roots	Ulcers	Consumption of root decoction is good for stomach ulcers.
70.	<i>Scoparia dulcis</i> L.	Scrophulariaceae	Kallurukki	Herb	Whole plant	Kidney stone	Consumption of whole plant juice along with milk is remedy for kidney stone.
71.	<i>Sphaeranthus indicus</i> L.	Asteraceae	Adakamaniyan	Herb	Root	Cough & stomach pain	Consumption of root powder is mixed with honey for stomach pain & cough.
72.	<i>Stobilanthes heyneanus</i> Nees	Acanthaceae	Karinkurinji	Shrub	Roots	Body pain.	Roots are boiled with water and it is used to take bath for body pain.
73.	<i>Tamarindus indica</i> L.	Caesalpiniaceae	Valanpuli	Tree	Leaves	Arthritis & body pain	Leaves boiled with water and bath using this water can cure arthritis and body pain.

74.	<i>Tectona grandis</i> L.	Verbenaceae	Thekku	Tree	Young leaves	Cuts & wounds	Crushed young leaves are applied over cuts and wounds.
75.	<i>Terminalia bellirica</i> (Gaertn.)Roxb.	Combretaceae	Thanni	Tree	Fruits	Hair tonic.	Crushed fruits are boiled with coconut oil and it is used as hair tonic.
76.	<i>Terminalia cuneata</i> Roth	Combretaceae	Neermaruthu	Tree	Leaves & bark	Cooling agent	Leaves and bark crushed well and it is mixed with water then it is used to wash hair.
77.	<i>Tiliacora acuminata</i> (Poir.) Miers. ex Hook.f.	Menispermaceae	Vallikanjiram	Climbing shrub	Leaves and roots	Cuts & wounds	The paste of leaves and roots are applied externally for cuts and wounds
78.	<i>Thottea siliquosa</i> (Lam.)Ding	Aristolochiaceae	Kuttivayana.	Shrub	Leaves	Stomach pain.	Consumption of leaf juice to reduce stomach pain.
79.	<i>Trichosanthus cuspidata</i> Lam.	Cucurbitaceae	Katupadavalam	Climber	Leaves & Veins	Stomach disorders	Used to make kashayam.
80.	<i>Tragia involucrata</i> L.	Euphorbiaceae	Choriyanam	Herb	Whole plant	Wounds	Whole plants are heated in sunlight and then it is used for making oil. This oil is applied over wounds.
81.	<i>Urena lobata</i> L.	Malvaceae	Oorppan	Shrub	Leaves	Wounds	Leaf paste is applied over wounds.
82.	<i>Vanda testacea</i> (Lindl.) Reich.	Orchidaceae	Maravazha	Epiphyte	Leaves	Earache	The juice is extracted from heated leaf and it is applied to the ear for earache.
83.	<i>Vernonia cinerea</i> (L.) Less.	Asteraceae	Puvankurunai	Herb	Leaves	Eye itching	The juice obtained from crushed leaves are directly applied for eye itching.
84.	<i>Vitex altissima</i> L.	Verbenaceae	Mylellu	Tree	Leaves	Cuts & wounds	Crushed leaves are applied over cuts and wounds.
85.	<i>Vitex negundo</i> L.	Verbenaceae	Karinochi	Small tree	Leaves	Arthritis & rheumatism	Leaves boiled with water and this water is used for bath to cure arthritis and rheumatism.
86.	<i>Zizyphus oenoplia</i> (L.) Mill.	Rhamnaceae	Churimullu	Climber	Fruits	Cooling agent	The juice obtained from fruits are used as cooling agent.
PTERIDOPHYTES							
87.	<i>Helminthostachys zeylanica</i> L.	Ophioglossaceae	Pazhutharakkali	Fern	Leaves	Scorpion poison	Leaf paste applied externally against scorpion bites.
88.	<i>Hemionitis arifolia</i> (Burm.)T.Moore	Hemionitidaceae	Eli cheviyan	Fern	Leaves	Skin diseases	Paste prepared from the leaves are mixed with paste of Neem leaves are applied over skin for various skin allergies.
89.	<i>Microsorium diversifolium</i> G.Forst.	Polypodiaceae	Pannal chedi	Fern	Leaves	Religious purpose	Leaves are tied on fingers for forgetting the death of husband.
90.	<i>Selaginella tenera</i> Spring.	Selaginellaceae	Urangachedi	Fern	Whole plant	Cuts & wounds	Crushed plants are applied externally over cuts and wounds.

CONCLUSION

The tribal population still depends on wild resources for their daily needs. The traditional knowledge of tribal communities of Nilambur has high ethnobotanical importance. They utilize numerous plants and their various parts viz., roots, leaves, stems and rhizome for various ethnomedicinal practices.

The present study concluded that the *Kattunaikkans* tribal population residing in and around the study area are still depending the many plants for the

treatment of various ailments and also for their nourishment. About the three fourths of the biologically active plant derived compounds have been discovered from researches on folk and ethnomedicinal uses. Such ethnobotanical information serves as a base for new compounds with active principles of phytochemical, pharmacological and clinical research. Therefore conservation and sustainable utilization such traditional knowledge is an urgent need for the future generation.

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