

Ethnomedicinal survey among Kani Tribes and traditional healers in Selected Tribal populations of Trivandrum district

Research Article

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Abstract

Indian tribes constitute around 8.3% of the total population. The health problems of tribal communities are influenced by the interaction of various socioeconomic and political factors. An attempt is made to document the traditional knowledge of the Kani tribes in the floristically rich Peringamala panchayath of Thiruvananthapuram district. The investigation revealed that the Kani tribes were using 127 species of ethnomedicinal plants, belonging to 57 families. The most cited family was Fabaceae and leaves were the most frequently used plant parts for the treatment of various diseases. Some medicinal plants used by Kani tribes which are included in the list of rare and endangered categories, such as *Aristolochia tagala*, *Holostemma adakodien*, *Entada scandens*, *Anaphyllum beddomeii*, *decalepsis arayalpathra* which are vanishing from the tribal settlement areas. So special attention should be given to cultivate and conserve these rare medicinal plants by making them available for mass cultivation, either through conventional methods or other non-conventional methods like micropropagation. The study showed that the Kani tribes have good knowledge about medicinal plants that have been passed orally from generation to generation. Current healers may be the final generation of Kani tribal healers. Due to rapid socio-economic and cultural changes, there is a possibility of losing the treasure of tribal knowledge in near future. The wealth of this tribal knowledge would lead to a greater potential for the Indian system of medicine towards new drug discovery and development.

Key Words: Traditional knowledge; Ethno-medicine; Kani tribes.

Introduction

India is one of the leading countries in Asia in terms of the wealth of traditional knowledge. Our country is having rich vegetation with a wide variety of plants, because of the extreme variations in geographical and climate conditions prevailing in the country. In the current situation, ethnomedicinal studies are relevant, because it brings to light the direct relationship of plants with human. It has offered immense scope and opportunities for the development of new drugs. Tribes constitute about 8.3% of the nation's population. (1) Some of the tribal medicines have already been Inco-operated in the organized system of medicines, yet large numbers of folk medicines have remained prevalent to certain tribal pockets as a guarded secret. The study area, Peringamala Panchayath is one of the important Panchayath in the Thiruvananthapuram district. "Kanikkars" are the earliest settlers of Peringamala Panchayath. Some of the tribal communities have come

into the mainstream, most of them are far from development and education.

Kani people inhabit the area around Agasthiyakutam and Mahendragiri peaks of the western part of the Adimali hills in Idukki. There are 1317 Kanikkaran families spread over eighteen Oorukkuttams (Hamlet) in this Panchayath. (2) Due to modernization, the traditional healing practices are now fast disappearing and there is a tendency to discard their traditional lifestyle and gradual migration to the mainstream. This is particularly true in Kani tribal communities in Peringamala Panchayath. Kerala is known to be a museum of different ethnic tribal groups, and they are continuing traditional practice with the help of available biological resources. Tribal communities have distributed in different parts of Kerala and they have a different lifestyle. The tribes possess traditional knowledge about the uses of medicinal plants and employ different plants for curing diseases. An abundance of ethnomedicinal information on plant uses can be found in the scientific literature but has not yet been compiled into a usable form. (3) Preserving the traditional knowledge of tribal communities and proper documentation of the ethnomedicinal uses of medicinal plants are useful and need of the hour. Traditional practitioners can also follow the quality treatment modalities from Kani tribes if it seems to be effective.

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Traditionally, the Kani tribes are known to be nomadic communities. They are native to the tropical forests of the Agasthyamalai hills in the Western ghats with a population of nearly 25,000. They were called 'Kanikkar' by the Sage Agastya, connoting, hereditary proprietor of the land. (4) Among tribal groups, the physicians are known as *Plathi*, they are the exclusive holders of tribal knowledge. Only *Plathi* has the right to transfer this knowledge following their customs. Now the government health centers have become more accessible and *Plathi's* role has become less important in this community. The Kanikudi or Kanipat (Settlements) is headed by a Muttukani who have great powers among tribes. However, over time, this traditional system of governance was largely replaced by the Panchayati Raj system of developed village administration. Today, Kani tribes live in the different tribal hamlets around the forest area of Thiruvananthapuram. Nowadays the quality-of-life style of Kani tribes has greatly improved when compared to ancient times. 'Malamkanis' are those living in the interior forest region who are still deprived of the basic amenities of life. There are 5872 Kanikaran families spread over 48 local bodies in 7 districts. (5)

Traditional practitioners perform an important role in providing health care to the inhabitants of Kerala. Traditional practitioners are part-time folk medical practitioners. They use medicinal plants and formulations and also may include animal parts, insects, and minerals. Traditionally trained Siddha healers to play an important role in rural health care by treating skin allergies, renal calculi, and poisonous bites. Evidence-based therapies have shown remarkable success in healing acute as well as a chronic disease. *Arogya Pacha (Trichopus zeylanicus)* (6) used by the Kani tribe of Kerala epitomizes the relevance of ethnomedicinal research and from this plant, scientists formulated a health drink known as '*Jeevani*'. It is known for its immunity-enhancing, anti-fatigue, liver-protective, and, DNA-protective properties. (7) Studies have also proved its varied spectrum of pharmacological properties such as antioxidant, aphrodisiac, anti-microbial, anti-inflammatory, immunomodulatory, anti-tumor, anti-ulcer, anti-hyperlipidaemic, hepatoprotective, and anti-diabetic. One of the main flaws of Traditional medicines is due to the unavailability of comprehensive and authentic information on the practice. Documentation of indigenous knowledge, in this type of study, is important for the conservation and utilization of biological resources. Also, there is a possibility of losing a wealth of traditional knowledge in near future. So, it's our responsibility to acquire and preserve the traditional system of medicine and conservation of rare endangered species. This study mainly focuses to investigate the medicinal efficacies and plant utilization among Kani tribes and local traditional healers in selected tribal settlements of Peringamala Panchayath, Thiruvanthapuram district. So, the documentation of this evidence will be more valuable for future generations and the scientific approach of wider use of traditional knowledge.

Materials and methods

This study was conducted as a community-based survey which comes under cross-sectional study by using a cluster sampling method. There are 18 Kani settlements in Peringamala Panchayath, Vamanapuram block, Thiruvananthapuram district as per the list obtained from the Integrated Tribal Development Project (ITDP). Peringamala is the largest panchayath in the Thiruvananthapuram district and shares its east boundary with Tamilnadu. It is located in the valley of the Ponmudi hills. In ancient times, this area was reputed for various forest products like honey, pepper, arachanut, etc. Agriculture is the main occupation of this locality. (8,9) From each settlement, 10 households were selected and in total 180 houses were enrolled for this study.

Fig.no - 1: Map of Peringamala Panchayath; Kerala.



Ethnomedicinal data collection – Mode of interview

There is no detailed information about 18 settlements of Peringamala Panchayath in published form. So that it deserves great attention for ethnomedicinal research on these settlements. Informants like tribes (Kanikkar) were selected in the cluster sampling method in the study area. Besides efforts were made to approach as were traditional practitioners as possible. Information was collected by interviewing them and filling a questionnaire for documentation. The information was gathered from Kani tribes and traditional healers who use plants for self-medication and to treat others. The reliability of the information was assessed after repeated verification. The information was collected during the daytime only. At the end of the interview, information was noted in written form. Data collection and analysis were simultaneously done.

Results and discussion

The present investigation comprises the Kani tribes in 18 settlements of Peringamala Panchayath were using 127 species of ethnomedicinal plants which are belonging to 57 families. The plants documented are arranged alphabetically by their botanical name with family, Malayalam name, Tamil name, ethnomedicinal uses were tabulated in Table.no - 1. Out of 127 medicinal plants, 18 them were included in the list of

rare and endangered categories Such as *Aristolochia tagala*, *Holostemma adakodien*, *Entada scandens*, *Begonia malabarica*,

Anaptyllum beddomeii, *decalepsis arayalpathra* are vanishing from the tribal settlement areas. So

special attention should be needed to conserve these plants through conventional methods or other non-conventional methods like micropropagation.

Table.no - 1: Ethnomedicinal plants used by the Kani groups of 18 tribal settlements of Peringamala panchayath.

Sl. No	Botanical Name/ Family	Vernacular Name	Tamil Name	Ethnomedicinal Uses (Medicinal uses reported by Kani tribes in the present area)
1	<i>Abrus precatorius</i> Linn. (Fabaceae)	Kunnikuru	Kunti	Seed is made into powder; which is used in skin disease. Coconut oil preparations are used to treat Rheumatism.
2	<i>Abutilon indicum</i> (L.) (Malvaceae)	Thutti	Thutti	Leaves are gently fried on castor oil and apply to inflamed areas. It is also good for piles. Leaves paste mixed with turmeric is applied on wounds.
3	<i>Abelmoschus moschatus</i> (L.) (Malvaceae)	Kasthurivenda	Kattu kasthuri	Improves digestion Bad odor (halitosis)
4	<i>Acacia catechu</i> (L.f) (Fabaceae)	Karungali	Karungali	A piece of wood boiled in water is good for lower blood sugar levels.
5	<i>Acalphya indica</i> L. (Euphorbiaceae)	Poochamayakki	Kuppaimeni	Cough with expectoration. It is an ingredient in a steam bath.
6	<i>Acorus calamus</i> L. (Araceae)	Vayambu	Vasambu	It is useful for the treatment of skin infections such as eczema and scabies. Given in children to improve speech quality.
7	<i>Achyranthes aspera</i> L. (Amaranthaceae)	Kadaladi	Nayuruvi	It is an ingredient in a steam bath. Applying extract of its fruit and seed is good for snake bites.
8	<i>Aegele marmelos</i> (L.) Correa (Rutaceae)	Koovalam	Vilvam	15ml leaf extract is taken orally, twice a day to cure diabetes. Fruit juice is a good remedy for constipation. It is used to cure cough, swelling, poisonous bites. Herbal hair oil is made from its leaves.
9	<i>Aerva lanata</i> (L.)Juss.ex schult (Amaranthaceae)	Cherula	Sirupeelai	The whole plant is used for urinary infections, kidney stones, and infections. Leaf extract mixed with milk is good for pregnant ladies. Especially after 7 months.
10	<i>Aloe barbedensis</i> Mill. (Liliaceae)	Kattarvazha	Kumari	Fresh juice is externally applied for inflammations. It is also used to prepare hair tonic.
11	<i>Alpinia galanga</i> (L.) (Zingiberaceae)	Chittaratha	Arathai	Vatha diseases, Kapha disorders, an ingredient in the steam bath.
12	<i>Alstonia scholaris</i> (L.) (Apocynaceae)	Ezhilampala	Ezhilampalai	The milky latex is externally applied for inflammations
13	<i>Anacardium occidentale</i> L. (Anacardiaceae)	Kasumavu	Munthiri	The fruit extract is used to cure chronic diarrhea and dysentery.
14	<i>Anisochilus carnosus</i> (L.f) Wall (Lamiaceae)	Panikoorkka	Karpooravalli	Productive cough, headache. Leaf juice mixed with honey is good for intestinal parasites, fever. It also gives relief from urinary infection and stomach pain.
15	<i>Aristolochia Indica</i> L. (Aristolochiaceae)	Garudakodi	Eecharamooli	Root and leaf paste is used for Snake poison
16	<i>Asparagus racemosus</i> Wild (Lilliaceae)	Shatavari	Thannervittan Kizhangu	Improves lactation, Stomach disorders. An ingredient in <i>Vara kuzhambu</i> used by Kani tribes for ulcers, swelling
17	<i>Azadirachta indica</i> A.Juss (Meliaceae)	Aaryaveppu	Vembu	Leaf paste is applied externally for chickenpox.
18	<i>Bacopa monnieri</i> (L.) (Scrophulariaceae)	Brahmi	Neerbrahmi	Oil preparation of leaf juice is applied on the head to cure fever and epilepsy. It also promotes hair growth.it helps to reduce inflammations.
19	<i>Biophytum sensitivum</i> (L.) (Geraniaceae)	Mukkutti	Nilaccurunki	Leaf preparations are given to ladies after delivery to cure uterine problems. Leaf and root extract are used to regulate menstrual bleeding. Root extract mixed with butter or ghee is good for wasp toxin. Leaf extract is good for skin burns.

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20	<i>Boerhavia diffusa L.</i> (<i>Nyctaginaceae</i>)	<i>Thazhuthama</i>	<i>Mukkirattai</i>	<i>Ilai thoran</i> (Stir-fried leaves) is effective to cure rheumatism and swelling. It is one of the ingredients in the steam bath. Drinking boiled water of its root is good for diabetes, urinary infection, arthritis.
21	<i>Cardiospermum halicacabum L.</i> (<i>Sapindaceae</i>)	<i>Uzhinja</i>	<i>Mudakattran</i>	It is used for constipation, fever. An ingredient in the steam bath
22	<i>Calophyllum inophyllum L.</i> (<i>Caryophyllaceae</i>)	<i>Punna</i>	<i>Punnai</i>	Root decoction is used to treat ulcers, wounds. Heated leaves are applied as a poultice to cuts, sores, ulcers, boils, and skin rash.
23	<i>Caesalpinia bonduc L.</i> (<i>Caesalpiniaceae</i>)	<i>Kazhachikai</i>	<i>Kazharchikkai</i>	Seed oil is used to treat rheumatism. Leaves and seeds, after roasting with castor oil, are applied externally to inflammations.
24	<i>Calotropis gigantea (L.)</i> (<i>Asclepiadaceae</i>)	<i>Erukku</i>	<i>Erukku</i>	Leaf paste is applied externally for wounds. It is an ingredient in the steam bath. Stem latex is directly applied for itching, rashes on the skin.
25	<i>Capsicum frutescens L.</i> (<i>Solanaceae</i>)	<i>Kantharimilagu</i>	<i>Milagai</i>	It is good for reducing high cholesterol.
26	<i>Cassia fistula L.</i> (<i>Caesalpinioideae</i>)	<i>Kanikonna</i>	<i>Sarakontrai</i>	Bath in water boiled with wood is good for psoriasis.
27	<i>Centella asiatica (L.)</i> (<i>Umbelliferae</i>)	<i>Kudangal</i>	<i>Vallarai</i>	Leaf paste is in taken for Diabetes, worm infestations. Leaf juice (1teaspoon) mixed with butter is good to improve immune power in children and mental ability.
28	<i>Chlorophytum laxum R.Br</i> (<i>Liliaceae</i>)	<i>Neeroottikizhan gu</i>	<i>Vellai musali, thiravanthi</i>	Tuber paste is applied over the affected area for inflammation.
29	<i>Cissus quadrangularis L.</i> (<i>Vitaceae</i>)	<i>Changalam Paranda</i>	<i>Pirandai</i>	It is used for the treatment of piles and rheumatism. Applying powdered dry stem with tamarind on the fractured site to heal the fracture.
30	<i>Cissampelos pereira L.</i> (<i>Menispermaceae</i>)	<i>Malathangi</i>	<i>Malathanni</i>	The leaf preparations used for post-partum management (uterine disorders).
31	<i>Clausena anisate (Willd)</i> (<i>Rutaceae</i>)	<i>Kattukariveppil a</i>	<i>Kattu kariveppilai</i>	Leaf preparations are used for worm infestations.
32	<i>Clerodendrum inerme (L.) Gaertn.</i> (<i>Verbenaceae</i>)	<i>Sangankuppi</i>	<i>Isangu</i>	The leaf preparations used for post-partum management (uterine disorders).
33	<i>Clerodendrum infortunatum L.</i> (<i>Verbenaceae</i>)	<i>Peruvalam</i>	<i>Kanduparangi</i>	It is an ingredient in the steam bath. Leaf paste is used as an external application for wounds.
34	<i>Clerodendrum serratum(L.)</i> (<i>Verbenaceae</i>)	<i>Cheruthekku</i>	<i>Siruthekku</i>	Root and bark preparations are used for pediatric diseases.
35	<i>Clitoria ternatea L.</i> (<i>Fabaceae</i>)	<i>Sangupushpam</i>	<i>Kakkattan</i>	Leaf paste is used for skin diseases.
36	<i>Curcuma longa L.</i> (<i>Zingiberaceae</i>)	<i>Manjal</i>	<i>Manjal</i>	The unripened tuber is a good treatment for an insect bite.
37	<i>Curculigo orchioides Gaertn</i> (<i>Amaryllidaceae</i>)	<i>Nilappana</i>	<i>Nilappanai</i>	The tuber is used to promote lactation. Tuber powder is mixed with coconut milk and made into pills and consumed for diabetes. The root is ground and applied over swelling.
38	<i>Curcuma amada Roxb.</i> (<i>Zingiberaceae</i>)	<i>Manga inji</i>	<i>Mangaiinji</i>	Used to cure skin diseases, stomach pain, gas trouble, constipation
39	<i>Curcuma aromatica Salisb.</i> (<i>Zingiberaceae</i>)	<i>Kasthoorimanja l</i>	<i>Kasthooriman jal</i>	It is used as an antidote to snake bites and is useful for sprains, cuts, swelling
40	<i>Cyclea peltata Hook.f&Thomas</i> (<i>Menispermaceae</i>)	<i>Pada thali</i>	<i>Padathali</i>	Leaf paste is applied directly over the burns. It is also used for dandruff and skin disorders. Root powder boiled with curd, intake one spoon daily to cure piles. applying a thick paste of its leaves on the scalp is good for eye diseases and will give coolness to the eyes.
41	<i>Cynodon dactylon (L.) pers</i> (<i>Poaceae</i>)	<i>Karuka</i>	<i>Aruganpul</i>	Leaf juice is used to stop nasal Bleeding(epistaxis)
42	<i>Datura alba F.Muell</i> (<i>Solanaceae</i>)	<i>Ummam</i>	<i>Oomathai</i>	Dried flower is made into powder and used to treat bronchial asthma.
43	<i>Delonix elata (L.)</i> (<i>Fabaceae</i>)	<i>Vatham kolli</i>	<i>Vatha narayanan</i>	<i>Vatha</i> disorders. It is an ingredient in a steam bath.
44	<i>Desmodium gyrans (L.f)DC</i> (<i>Fabaceae</i>)	<i>Ramanama Pacha</i>	<i>Thozhukanni</i>	It is used in the treatment of sprains.

45	<i>Desmodium triflorum(L.)DC. (Fabaceae)</i>	<i>Cherupulladi/ Nilamparanda</i>	<i>Cherupulladi/ Nilamparanda</i>	Preparations from leaf powder are used for urinary problems.
46	<i>Dioscorea triphylla L. (Dioscoreaceae)</i>	<i>Noorankizhang u</i>	-	Root tuber is the main food of tribes. It is highly nutritional; it gives strength, vitality to the body.
47	<i>Eclipta alba (L.) Hassk. (Asterceae)</i>	<i>Kaiyonni</i>	<i>Karisalai</i>	Leaf extract mixed with sesame oil is good for headaches, hair loss. It cures diseases related to phlegm, arthritis, and worm infestation.
48	<i>Elephantopus scaber L. (Asteraceae)</i>	<i>Aanachuvadi</i>	<i>Yanaisuvadi</i>	Leave paste is used to reduce inflammation. The whole plant is used for the treatment of piles, liver, and gastrointestinal disorders.
49	<i>Emilia sonchifolia(L.)DC. (Asteraceae)</i>	<i>Muyalcheviyan</i>	<i>Muyalchevi</i>	The paste made from the entire plant is used for wound healing. Leaf extract is dropped into the eyes for cleaning and for cooling effect.
50	<i>Euphorbia hirta L. (Euphorbiaceae)</i>	<i>Chithirappala</i>	<i>Amanpachiras i</i>	Used for the treatment of jaundice, diabetes, asthma.
51	<i>Evolvulus alsinoides(L.)L. (Convolvulaceae)</i>	<i>Vishnu kiranthi</i>	<i>Vishnu Kranti</i>	The whole plant is powdered and mixed with jaggery used for chest infection. <i>Vishnu kranthi karkam</i> in the size of a gooseberry along with hot water is a good remedy for malaria.
52	<i>Ficus benghalensis L. (Moraceae)</i>	<i>Peraal</i>	<i>Aalamaram</i>	The milky juice is used for rheumatism and bruises.
53	<i>Ficus religiosa L. (Moraceae)</i>	<i>Arayaal</i>	<i>Arasumaram</i>	Taking leaf decoction twice a daily to control diabetes.
54	<i>Ficus glomerata Roxb. (Moraceae)</i>	<i>Atti</i>	<i>Atti</i>	Bark extract boiled with rice water and administrated internally for worm infestation.
55	<i>Gloriosa superba L. (Colchicaceae)</i>	<i>Menthonni</i>	<i>Kalappaikizhangu</i>	Leaf paste is applied externally to treat headaches. Application of root paste is a remedy for snakebite and scorpion sting.
56	<i>Glycyrrhiza glabra L. (Fabaceae)</i>	<i>Erattimadhura m</i>	<i>Athimathuram</i>	The finely powdered root is mixed with hot water and administrated orally to treat a cough with expectoration.
57	<i>Gossypium arboretum L. (Malvaceae)</i>	<i>Paruthi</i>	<i>Paruthi</i>	Leaf paste is used for chest pain.
58	<i>Helicteres isora L. (Sterculiaceae)</i>	<i>Idampiri Valampiri</i>	<i>Valampurikkai</i>	Decoction of whole plant part is used for snake bite. Fruits are stomachic.
59	<i>Hemidesmus indicus (L.) (Asclepiadaceae)</i>	<i>Naruneendi</i>	<i>Nannari</i>	The extract is used to apply to wounds and sprains.
60	<i>Hibiscus rosasinensis L. (Malvaceae)</i>	<i>Chemparathi</i>	<i>Chemparathai</i>	Preparations from the flower part are used to cure bronchial asthma. Oil preparations help to promote hair growth.
61	<i>Indigofera tinctoria L. (Fabaceae)</i>	<i>Neelaamari</i>	<i>Avuri</i>	Coconut oil preparation of leaf juice helps to promote hair growth.
63	<i>Justicia gendasussa Burm.f. (Acanthaceae)</i>	<i>Vathakodi</i>	<i>Vathamkolli</i>	It is an ingredient in a steam bath.
64	<i>Kaempferia galanga L. (Zingiberaceae)</i>	<i>Kacholam</i>	<i>Thakkolam</i>	Leaves are made into ash and rubbed over the breast to treat mastitis after childbirth. Leaves are chewed for relieving cough.
65	<i>Lecuas aspera (Willd) (Lamiaceae)</i>	<i>Thumba</i>	<i>Thumbai</i>	Leaf and flower juice mixed with tamarind is good for scorpion poison.
66	<i>Maranta arundinacea L. (Marantaceae)</i>	<i>Koovakizhangu</i>	<i>Koovakizhangu</i>	It is used for the treatment of snake poison.
67	<i>Mimosa pudica L. (Mimosaceae)</i>	<i>Thottalvadi</i>	<i>Thottalsinungi</i>	Whole plant extract mixed with 10 ml of coconut milk is taken the daily morning to cure asthma. Ground leaves are applied to wounds. Root extract is good for sprains and bruises. It is an ingredient in herbal hair oil.
68	<i>Mimusops elengi L. (Sapotaceae)</i>	<i>Elanji</i>	<i>Magizham</i>	Bark decoction is given internally for worm infestations. It is also used for poisonous bites.
69	<i>Glinus lotoides L. (Aizoceae)</i>	<i>Cheruppada</i>	<i>Siru cheruppada</i>	Root paste is applied over the skin to treat skin ailments and pruritis.
70	<i>Moringa oleifera L. (Moringaceae)</i>	<i>Murunga</i>	<i>Murungai</i>	Leaves ground with salt and applied over swelling and rheumatism.
71	<i>Moringa tinctoria Roxb. (Moringaceae)</i>	<i>Manjanathi</i>	<i>Nuna</i>	Leaf decoction administrated orally to treat dysentery.

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72	<i>Murraya koenigii</i> (L.) (Rutaceae)	Kariveppila	Kari vembu	It is used as an ingredient in many medicinal preparations for reducing cholesterol levels, high blood pressure.
73	<i>Musa paradisiaca</i> L. (musaceae)	Vazha	Vazhai	<i>Pattai chaaru</i> (bark juice) is given for obesity. Cooked flowers are given to diabetes.
74	<i>Naregamia alata</i> Wight&Arn (Meliaceae)	Nilanarakam	Nilanarakam	Leaf paste is applied over Lipoma.
75	<i>Ocimum sanctum</i> L. (Lamiaceae)	Thulasi	Thulasi	Oil is good to apply on Whitelaw, headache, and cold. A mixture of basil leaves and turmeric is good for poisonous bites. Oral administration of leaf extracts helps to decrease blood glucose levels.
76	<i>Ocimum sps.</i> L. (Lamiaceae)	Kuzhimundan	-	Oil preparations of the leaf juice are used to make hair oil.
77	<i>Oxalis corniculata</i> L. (Oxalidaceae)	Puliyarila	Puliyarai	Leaf paste is applied to the forehead to cure headaches. Leaf juice is mixed with onion juice is applied externally on warts.
78	<i>Pergularia daemia</i> (Forssk.) (Asclepiadaceae)	Velipparuthi	Uthamani	Latex of <i>uthamani</i> (<i>Pergularia daemia</i>) can be applied for treating boils and wounds. Root decoction is taken to treat arthritis. Powder from roasted roots or leaves is applied to wounds.
79	<i>Phyllanthus embilica</i> L. (Euphorbiaceae)	Nelli	Nelli	Fruit juice is good for diabetes.
80	<i>Phyllanthus niruri</i> L. (Euphorbiaceae)	Keezhanelli	Keezhanelli	The whole plant is ground and mixed with coconut milk and taken for jaundice. It is used to cure cough, bleeding, stomach pain, indigestion. An ingredient in herbal hair oil. It enhances hair growth and reduces baldness.
81	<i>Piper betel</i> L. (Piperaceae)	Vettrila	Vettrilai	Leaf juice mixed with ginger juice and honey is used to cure asthma.
82	<i>Piper longum</i> L. (Piperaceae)	Thippili	Thippili	Fruit is used in the treatment of fever, cough.
83	<i>Piper nigrum</i> L. (Piperaceae)	Milagu	Milagai	Improves digestive power and promotes appetite.
84	<i>Pterocarpus marsupium</i> Roxb. (Fabaceae)	Karivenga	Vengai	The inner part of the wood is boiled in sesame oil and applied to the scalp to prevent premature grey hair.
85	<i>Ricinus communis</i> L. (Euphorbiaceae)	Avanakku	Amanakku	It is an ingredient in a steam bath. Leaf and seed preparations are used in eye diseases, <i>Vatha diseases</i> , and ear-related problems. Its fruit is used to make herbal hair oil.
86	<i>Ruellia Patula</i> Jacq. (Acanthaceae)	Chilanthi Pacha	Kiranthinayagam	Snakebite, wounds, and scabies. Used as a single drug remedy against the deadly poison of <i>Kaduvachilanthi</i> (Tiger spider).
87	<i>Sansevieria roxburghiana</i> Schult. & Schult.F (Lilliaceae)	Sarpapola/ pampatti	Marul	Leaves are used for the preparation of earache.
88	<i>Salacia reticulata</i> Wight (Celastraceae)	Ponkoranti	Kadalazhinjil	It is used in the treatment of Urinary disorders
89	<i>Saraca asoca</i> (Roxb.)W.J.de Wilde (caesalpiniaceae)	Asokam	Asogu	The dried stem bark is a remedy for uterine disorders, dysentery. Oil preparation from the flower is used to treat psoriasis.
90	<i>Scoparia dulcis</i> L. (Plantaginaceae)	Kallurukki	Sarakkothini	It is good for UTI and kidney stones. Ingredient in hair oil for headache and fever.
91	<i>Scleria lithosperma</i> (L.) (Cyperaceae)	Vakkathipullu	Kadenpullu, katinappul	Tuber is washed, baked, powdered, and mixed with coconut oil is applied over the infection, Sebaceous cyst (<i>Maykkuru</i>)
92	<i>Senna oxidentalis</i> (L.) (Caesalpinaceae)	Oolanthakarai	Oosithakarai	It is used to cure Kapha disease, asthma, skin diseases, and anemia.
93	<i>Sesbania grandiflora</i> (L.) (Fabaceae)	Agasthikeera	Agathi	Flower extract mixed with cow's milk and used internally to prevent leucorrhea and uterine disorders.
94	<i>Sida rhombifolia</i> L. (Malvaceae)	Kuruthotti	Kuruthotti	Root decoction is used to treat rheumatism.
95	<i>Solanum surettense</i> Burn.f. (Solanaceae)	Kandankarichu nda	Kandan kathiri	Cough with expectoration, tuberculosis.

96	<i>Smilax chinensis</i> L. (<i>Smilacaceae</i>)	<i>Kariyilanchi</i>	<i>Parangipattai</i>	Root juice is used to cure rheumatism, skin troubles.
97	<i>Solanum torvum</i> Sw. (<i>Solanaceae</i>)	<i>Putharichunda</i>	<i>Chundaikkai</i>	Leaf paste is applied externally over wounds.
98	<i>Syzygium cumini</i> (L.) (<i>Myrtaceae</i>)	<i>Njaval</i>	<i>Naval</i>	It is good for curing wounds and skin diseases.
99	<i>Tamarindus indicum</i> L. (<i>Fabaceae</i>)	<i>Puli</i>	<i>Puli elai maram</i>	It is one of an ingredient in the steam bath. Boiled water of tamarind leaves is good for skin diseases and tiredness.
100	<i>Terminalia chebula</i> Retz. (<i>Brassicaceae</i>)	<i>Kadukkai</i>	<i>Kadukkai</i>	It is an ingredient in the steam bath. It's also used for rheumatism.
101	<i>Tinospora cordifolia</i> (Willd) (<i>Menispermaceae</i>)	<i>Chittamruthu</i>	<i>Seenthil</i>	Leaf extract mixed with half spoon of turmeric powder is taken for diabetes.
102	<i>Tragia involucrata</i> L. (<i>Euphorbiaceae</i>)	<i>Choriyanam/ Kodithoova</i>	<i>Kanjori</i>	leaves are roasted and ground with rice, administrated orally to cure cough.
103	<i>Tylophora indica</i> (Burn.f.)Merr. (<i>Asclepiadaceae</i>)	<i>Vallipala</i>	<i>Nanjaruppan</i>	It is effective for curing asthma. oil preparation is used to reduce inflammations.
104	<i>Ventilago maderaspatana</i> Gaertner. (<i>Rhamnaceae</i>)	<i>Vembada, Marapettykody</i>	<i>Surulbattaikkoti, Vempadam</i>	The powder of stem bark mixed with gingelly oil is applied externally to treat skin diseases and itches. Bark paste is used for the treatment of the bone fracture.
105	<i>Vernonia cineria</i> (L.)Less (<i>Asteraceae</i>)	<i>Poovamkurunthal</i>	<i>Neichitti</i>	Leaf juice is used as eye drops against conjunctivitis.
106	<i>Vinca rosea</i> L. (<i>Apocynaceae</i>)	<i>Savamnaari</i>	<i>Nithya Kalyani</i>	It is used for the treatment of skin diseases such as acne, eczema, and dermatitis.
107	<i>Vitex negundo</i> L. (<i>Verbenaceae</i>)	<i>Kari notchi</i>	<i>Notchi</i>	Oil preparation of leaf extract is applied daily on the head to cure ear-related disorders. It is an ingredient in the steam bath. A decoction made from leaves of <i>Adathodai</i> (<i>Adathoda vassica</i>), <i>Notchi</i> (<i>Vitex negundo</i>) <i>Milagu</i> (<i>piper nigrum</i>) , <i>karpooravalli</i> (<i>Plectranthus amboinicus</i>) together intake for curing fever.
108	<i>Wrightia tinctoria</i> R.Br. (<i>Apocynaceae</i>)	<i>Dhanthapala</i>	<i>Vetpalai</i>	Latex is used for tooth pain. Ingredient in hair oil. It is used for skin disorders.
109	<i>Zingiber officinale</i> Roscoe. (<i>zingiberaceae</i>)	<i>Inji</i>	<i>Inji</i>	A decoction from 50gm dried ginger and 1liter water and make it 100 ml. consuming 50 ml of the decoction daily will give relief from a heart attack. It is good for digestion, stomach ache, and gas trouble.

Collection of indigenous and endangered plant species

110	<i>Diploclisia glaucescens</i> (Blume) Diels(11) (<i>Menispermaceae</i>)	<i>Vattavalli, Vattoli, Theepacha</i>	<i>Kottaiyachachi, Morasankodi.</i>	This plant is used by the <i>Kani</i> tribes to heal burns. The mixture of Plant leaves, gingelly oil, and coconut oil is used to heal sprains.
111	<i>Rauwolfia serpentina</i> (L.) Benth.exkurz. (12) (<i>Apocynaceae</i>)	<i>Sarpagandhi</i>	<i>Sarpagandha</i>	The root is used for snake bites.
112	<i>Anaphyllum beddomei</i> Engl. (13,14) (<i>Araceae</i>)	<i>Keerikizhangu</i>	-	<i>Kani</i> tribes use this plant as food and as well as an antidote for snakebite. This medicinal preparation is also used by <i>Malayarayan</i> tribes in the Idukki district of Kerala.
113	<i>Thottea siliquosa</i> (Lam)Ding Hou.(15) (<i>Aristolochiaceae</i>)	<i>Alpam, Karelvegam, Kodaashari, Kuttivayana,</i>	<i>Kuttivayana, Kuravankand amooli</i>	It is used as antivenom and also used to treat diarrhea, dysentery, often administered with lemon juice. Paste prepared from the plant with oil is effective against chronic sores and ulcers.
114	<i>Ceropegia spiralis</i> Wight (16) (<i>Apocynaceae</i>)	<i>Parayilpandam</i>	-	The importance given to <i>Ceropegia</i> species by <i>Kani</i> tribes shows that it has certain effectiveness and potential medicinal properties. This plant is used in the treatment of fever, indigestion, and liver diseases. The corm of this plant is used as food, for blood purification and syphilis.
115	<i>Knema attenuate</i> Warb. (17) (<i>Myristicaceae</i>)	<i>Chennelli, chorapatiri</i>	<i>Surapathiri</i>	Stem bark decoction is used to cure jaundice, chronic fever. It is an ingredient of <i>Ashwagandhadhi nei</i> used for breathing difficulty, splenic disorders, etc.

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116	<i>Chassalia curviflora</i> (Wall.) (18) (Rubiaceae)	Vellamundan, Karuthaamalppori, Yamari, Vellakur	Kaattu sirukaapi patchillai, Nirvisam	Effective medicine for the treatment of jaundice. It is believed to be three times more effective than the commonly used medicinal plant, <i>Keezhanelli</i> (<i>Phyllanthus fraternus</i>).
117	<i>Pterospermum rubiginosum</i> B.Heyne ex wight & Arn(19) (Sterculiaceae)	Chittilaplavu, Ellooti, Malamthodali	Ponnankai, Malaitholli	To treat broken bones, Bark is crushed and kept on a clean cloth (<i>kizhi</i>)and heated over a hot mud utensil at a mild temperature. It is gently applied over the affected area for relief. Bark extract is mixed with wild pork fat is applied over the fractured site and tighten with a cloth.
118	<i>Holostemma ada-kodien</i> Schult(20,21) (Apocynaceae)	Adapathiyam, jivani, jivanthi	Adapothiyan, palaikkirai	Used for the treatment of diabetes mellitus, this is the drug of choice for emaciation, weakness, fever, difficult breathing, burning sensation in the body, and fertility issues. It enhances life, vigor, and fertility.
119	<i>Entada gigas</i> (L.) (22) (Fabaceae)	Kakkumkai, Parandakkai	Thellukkai	The seed preparations are used as a nutritive supplement in jaundice. It can be administered with either milk or rice water. It can be used as gruel also.
120	<i>Trichopus zeylanicus</i> Gaertn(23,24) (Dioscoreaceae)	ArogyaPacha	Arogyapachi	The whole plant is shaded, dried, powdered, and mixed with distilled water. Indication: Obesity
121	<i>Simarouba glauca</i> DC. (25) (Simaroubaceae)	LakshmiTaru	Swargamaram	A decoction is taken internally in the treatment of diarrhea, dysentery, malaria, fevers, hemorrhages, intestinal parasites, and colitis.
122	<i>Cnidoscopus aconitifolius</i> (Mill.)I.M.Johnst(26) (Euphorbiaceae)	Chayamansa	-	It is used to control body weight and cholesterol and also Chaya leaves improve glucose metabolism and prevent diabetes
123	<i>Hydnocarpus alpinus</i> Wight (27) (Achariaceae)	kattu Marotti	Malaivatti, korangu thalai	Seed oil is used to cure skin diseases.
124	<i>Decalepis arayalpathra</i> (J. Joseph&V.Chandras.)Venter (28) (Apocynaceae)	Janaki arrayal Patra	Amritha pala	Fresh tuberous root juice is mixed with an equal quantity of the juice of coconut kernel.it is boiled for some time and administered as a dose of 10-15 ml, twice daily for 30 days to cure peptic ulcers. It acts as a rejuvenating tonic and improves the strength and stamina of the body.
125	<i>Argyrea nervosa</i> (Burn.f.)Bojer (29) (Convolvulaceae)	Samudra Pacha	Kadarpalai, samudrapalai	It is used in the treatment of rheumatism. The leaf is applied to the inflamed part. It accelerates suppuration while the upper smooth surface helps in wound healing.
126	<i>Begonia malabarica</i> Lam. (30) (Begoniaceae)	Kaiyyalapuli, janankolli, enamkolli, Rakthasuri,	Narayana sanjeevi	Leaf paste is applied gently covering the entire foot for tinea pedis (<i>Settrupun</i>). Dried aerial parts of plants are made a paste with coconut oil is taken to rheumatic pain. <i>Kanikkar</i> uses the fresh leaf juice of this plant with salt to treat giddiness. The fresh leaf juice is taken orally on empty stomach to relieve stomach pain.
127	<i>Aristolochia tagala</i> Cham. (31) (Aristolochiaceae)	Malayarayan	Perumooli	Root and leaf paste is used for Snake poison.

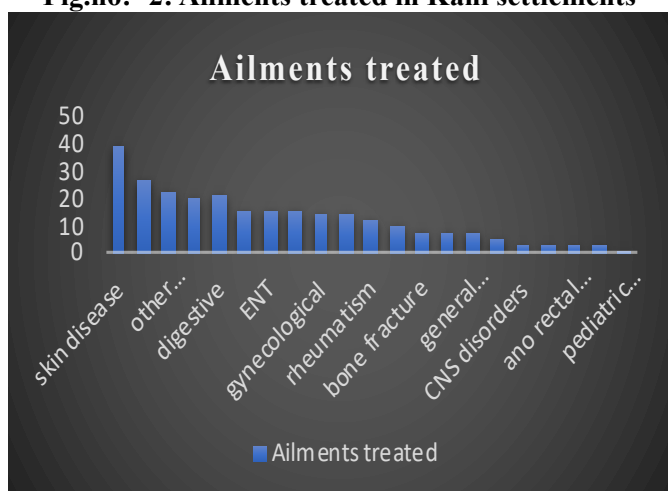
Regarding the plants mentioned by respondents, the most cited families were Fabaceae with 12 species followed by Euphorbiaceae (7 species), Zingiberaceae and Apocynaceae (6 species), Malvaceae (5 species), whereas Verbenaceae, Menispermaceae, Asclepiadaceae, Solanaceae, Lamiaceae, Asteraceae and Liliaceae (4 species), Piperaceae, Acanthaceae, Rutaceae, Aristolochiaceae, Moraceae and Caesalpiniaceae (3 species), Moringaceae, Dioscoreaceae, Meliaceae, Sterculiaceae, Amaranthaceae and Convolvulaceae (2 species), and 33 families were represented with single binomial species (Table.no – 2).

Table 2: Represented Families with single-member and their binomial

Sl No	Family	Binomial Name	Sl No.	Family	Binomial Name
1	Guttiferae	<i>Caryophyllum inophyllum</i> L.	18	Polygalaceae	<i>Polygala glabra</i> B.Heyne ex A.W.Benn.
2	Rhamnaceae	<i>Ventilago maderaspatana</i> Gaertn.	19	Costaceae	<i>Costus speciosus</i> (J.Koenig) Sm.
3	Myrtaceae	<i>Syzygium cumini</i> (L.)	20	Simaroubaceae	<i>Simarouba glauca</i> DC.

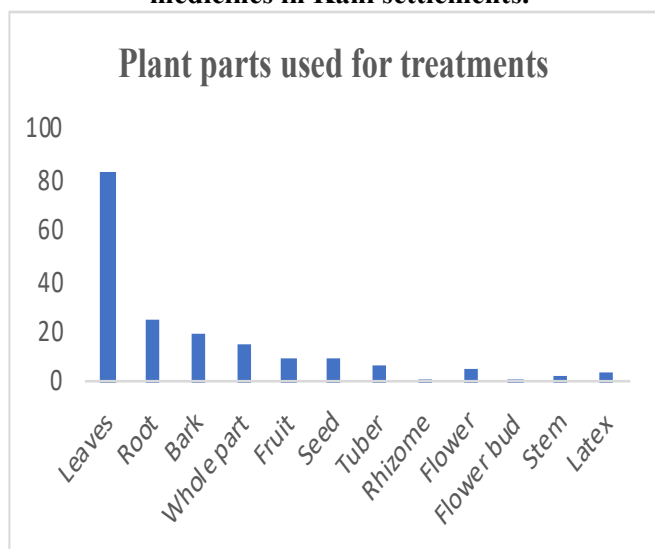
4	Mimosaceae	<i>Mimosa pudica L.</i>	21	Rubiaceae	<i>Chasalia curviflora(Wall.)</i>
5	Cucurbitaceae	<i>Trichosanthes curcumina L.</i>	22	Nyctaginaceae	<i>Boerhavia diffusa L.</i>
6	Begoniaceae	<i>Begonia malabarica Lam.</i>	23	Brassicaceae	<i>Terminalia chebula Retz.</i>
7	Musaceae	<i>Musa paradisiaca L.</i>	24	Myristicaceae	<i>Knema attenuate Warb.</i>
8	Boraginaceae	<i>Heliotropium indicum L.</i>	25	Smilacaceae	<i>Smilax chinensis L.</i>
9	Colchichaceae	<i>Gloriosa superba L.</i>	26	Poaceae	<i>Cynodon dactylon (L.) pers.</i>
10	Celastraceae	<i>Celasia oblonga L.</i>	27	Oxalidaceae	<i>Oxalis corniculata L.</i>
11	Plumbaginaceae	<i>Plumbago rosea L.</i>	28	Aizoaceae	<i>Glinus lotoides L.</i>
12	Amaryllidaceae	<i>Curculigo orchiodis Gaertn.</i>	29	Vitaceae	<i>Cissus quadrangularis L.</i>
13	Acharidaceae	<i>Hydnocarpus alpine Wight</i>	30	Umbelliferae	<i>Centella asiatica (L.)</i>
14	Sapotaceae	<i>Mimusops elengi L.</i>	31	Geraniaceae	<i>Biophytum sensitivum (L.) sensitivum</i>
15	Scrophulariaceae	<i>Bacopa monnieri (L.)</i>	32	Sapindaceae	<i>Cardiospermum halicababaum L.</i>
16	Cyperaceae	<i>Scleria lithosperma (L.)</i>	33	Anacardiaceae	<i>Anacardium occidentale L.</i>
17	Plantaginaceae	<i>Scoparia dulcis L.</i>			

Fig.no: -2: Ailments treated in Kani settlements



Traditional healers are using plants to cure diseases like Toxic fever, Burns, Asthma, Tuberculosis, Urinary tract infection (UTI), kidney stone, Sebaceous cyst, Trauma, Bone fracture, Uterine disorders, ENT disorders, Obesity, Diabetes mellitus, Ano-rectal disorders, Cholera and toxic conditions (snake bite, scorpion bite, spider bite and all type of poisonous bites).

Fig. no: 3: Plant parts used for the preparation of medicines in Kani settlements.



The result of the present study provides evidence that the most frequently used plant parts are leaves followed by root, bark, whole plant, fruit, seed, tuber (Fig. no: 3). Most of the traditional healers use plants that are easily accessible and available for the treatment of common illnesses. It can also be noted that some medicinal plants were used in more than one form of preparation. Various plant parts are also used in the form of decoction, pills, paste, or powder. Most of the medicines are administrated with additives like honey or coconut milk or jaggery or cow's milk. It was observed that different plants have different routes of administration. Certain forms of medicines are taken orally (46%). While most of the plant parts are utilized as external applications (54%).

Kani tribes and traditional healers of Peringamala panchayath were used different parts of medicinal plants as medicine. The present study documented 127 medicinal plants which belong to 57 families. The most cited family was Fabaceae. This result is in agreement with P Nusaifa Beevi et al., (10) who documented a total of 101 medicinal plants used by the Kani tribes in two settlements of Peringamala panchayath where the majority, belonged to Fabaceae. Most of the collected plants were herbaceous, followed by shrub (25%), trees (22%), Climber (16%) (Fig. no: 4). The plants under study were utilized for curing diseases like cure diseases like Toxic fever, Burns, Asthma, Tuberculosis, Urinary tract infection (UTI), kidney stone, Sebaceous cyst, Trauma, Bone fracture, Uterine disorders, ENT disorders, Obesity, Diabetes mellitus, Ano-rectal disorders, Cholera and toxic conditions (snake bite, scorpion bite, spider bite and all type of poisonous bites). Simple formulations followed by traditional healers of Peringamala panchayath are mentioned in Table.no – 3. Some medicinal plants used by Kani tribes such as *Keeri kizhangu (Anaphyllum beddomeii)*, *Echaramooli (Aristolochia indica)*, *Perumooli (Aristolochia tagala)*, *Kiranthinayakam (Ruellia patula)* for treating toxic conditions (Table.no – 4).

Table.no - 3: Simple Herbal Formulations, followed by traditional healers of Peringamala Panchayath.

Sl. No	Disease/ symptoms	Formulations
1	Recurrent fever	<ul style="list-style-type: none"> Take <i>Uthamani charu</i> (juice of <i>Pergularia daemia</i>) and mix with honey in equal quantity and given twice a day. An equal quantity of <i>Chukku</i> (<i>Zingiber officinale</i>), <i>Milagu</i> (<i>Piper nigrum</i>), <i>Thippili</i> (<i>Piper longum</i>), <i>Kadukkai</i> (<i>Terminalia chebula</i>) is taken added with jaggery and made into pills and It is administrated twice a day with honey.
2	Toxic fever	<ul style="list-style-type: none"> Take <i>Veppilai</i> (<i>Azadirachta indica</i>), <i>Siruvengayam</i> (<i>Allium cepa</i>) <i>Milagu</i> (<i>Piper nigrum</i>), <i>Vettilai</i> (<i>Piper betle</i>) in equal quantity and add 250ml of water, reduced it to 50ml, and filter it. Dosage: 15 – 30ml twice a day
3	Burns	<ul style="list-style-type: none"> <i>Morasankodi</i> (<i>Diploclisia glaucesens</i>) leaves are fried, powdered, made into a paste, and applied over the affected area.
4	Asthma	<ul style="list-style-type: none"> Take an equal quantity of <i>Vettilai Charu</i> (<i>Piper betle</i>), <i>Inji charu</i> (<i>Zingiber officinale</i>) mixed with honey and administrated twice a day. <i>Nilappanai kizhangu</i> (<i>Curculigo orchiodes</i>) is washed, dried, powdered and about 5gm powder is made into pills with coconut milk, which is administrated with Luke warm water.
5	Phlegm accumulation in the chest	<ul style="list-style-type: none"> <i>Vishnukiranthi</i> (<i>Evolvulus alsinoides</i>) samoolam is dried in shade, powdered, and mixed with jaggery which is administrated twice a day. 20gm of <i>keezhanelli</i> (<i>Phyllanthus niruri</i>) samoolam is crushed into a paste and consumed on empty stomach with cows' milk or coconut milk. <i>Muyalsevi</i> samoolam (<i>Emilia sonchifolia</i>) samoolam is applied over the throat and neck. <i>Adathodai</i> (<i>Justicia adhatoda</i>) <i>Karintochi</i> (<i>Vitex negundo</i>) leaves are made into a paste and mixed with coconut milk. It is taken to cure cough and chest pain and administer twice a day.
6	Tuberculosis	<ul style="list-style-type: none"> 5gm of <i>Athimathuram</i> (<i>Glycyrrhiza glabra</i>) is consumed with milk.
7	Urinary tract infection (UTI), kidney stone.	<ul style="list-style-type: none"> <i>Kalluruki</i> (<i>Scoparia dulcis</i>) samoola charu is given twice a day (5 ml)
8	Headache	<ul style="list-style-type: none"> <i>Murungai</i> (<i>Moringa oleifera</i>) <i>ilai chaaru</i> mixed with <i>milagu</i> (<i>Piper nigrum</i>) which is applied over the affected area. 20 gm fresh root of <i>Garudakodi</i> (<i>Aristolochia indica</i>) along with 5gm of <i>Maramanjil</i> (<i>Coscinium fenestratum</i>) crushed to paste and applied over the forehead. Two drops of <i>Thumbai</i> (<i>Leucas aspera</i>) <i>poo chaaru</i> is instilled into the nose (Nasiyam)
9	Sebaceous cyst	<ul style="list-style-type: none"> <i>Vakkathipullu</i> (<i>Scleria lithosperma</i>) <i>kizhangu</i> is washed, baked, powdered, and mixed with coconut oil and applied over the infection.
10	Sprain	<ul style="list-style-type: none"> Apply a mixture of <i>Morasankodi</i> (<i>Diploclisia glaucesens</i>) leaves, gingelly oil, coconut oil on the affected area. <i>Ellottipattai</i> (<i>Pterospermum rubiginosum</i>) is crushed and kept on a clean cloth and heated over a hot mud utensil at a mild temperature. It is gently applied over the affected area.
11	Acute inflammation	<ul style="list-style-type: none"> Apply paste made of: <ul style="list-style-type: none"> <i>Vallarai</i> (<i>Centella asiatica</i>) <i>Murungai iliai</i> (<i>Moringa oleifera</i>) <i>Uppu</i> (Salt), <i>Vathamadakki</i> (<i>Boerhavia diffusa</i>) <i>Siruvengayam</i> (<i>Allium cepa</i>) over affected area. <i>Neerootikizhangu</i> (<i>Chlorophytum laxum</i>) paste is applied over the affected area. <i>Moosambaram</i> (<i>Aloe barbadensis</i>) is mixed with egg white and applied over the inflamed area. <i>Thottalsinungi</i> (<i>Mimosa pudica</i>) samoolam is mixed with <i>Kalluppu</i> (Rock salt) and <i>Arikkadi</i> (rice-washed water) and applied.
12	Bone fracture	<ul style="list-style-type: none"> The bark of <i>Ellootti</i> (<i>Pterospermum rubiginosum</i>) after removing the outer dead layer is crushed to paste with lukewarm water. The bone is held back into the normal position and the paste is applied over the affected area.
13	Nervine tonic General health	<p>Pancha moola sanjeevi:</p> <ul style="list-style-type: none"> <i>Sivakaranthai choornam</i> (<i>Sphaeranthus amaranthoides</i>) <i>Keezhanelli samoolam</i> (<i>Phyllanthus niruri</i>) <i>Arisithippili</i> (<i>Piper longum</i>) <i>Vasambu</i> (<i>Acorus calamus</i>) <i>Seenthil samoolam</i> (<i>Tinospora cordifolia</i>) <p>All the ingredients are taken in equal quantity, to be mixed and preserved in a clean bottle. Dose: 2-4 grains, twice a day, 40 days Adjuvant: honey</p>
14	Trauma	<ul style="list-style-type: none"> Take <i>Perivalam</i> (<i>Cleodendrum infortunatum</i>) tender leaves, crushed into a paste with a little amount of lime, and applied over wound. A mixture of <i>Thottarsinugi</i> (<i>Mimosa pudica</i>), <i>Tintanali</i> (<i>Biophytum sensitivum</i>) leaves paste is applied over the affected area. <i>Murungai</i> (<i>Moringa oleifera</i>) <i>pattai</i> is ground with <i>Kadugu</i> (<i>Brassica nigra</i>) mixed with salt and applied over the affected area.

15	Abrasions	<ul style="list-style-type: none"> • <i>Vettukayapoonda (Tridax procumbens)</i> leaves are ground and applied over the affected area.
16	Uterine disorders	<ul style="list-style-type: none"> • <i>Thengin poo kula rasayanam</i> (Ayurvedic preparation made from Coconut inflorescence)
17	Anemia	<ul style="list-style-type: none"> • <i>Enamkolli (Begonia malabarica)</i> leaf juice mixed with ginger juice is given.
18	Otalgia	<ul style="list-style-type: none"> • <i>Koshtam (Costus speciosus)</i> stem extract is heated, mixed with lukewarm water, and instilled as ear drops. • <i>Vilvam (Aegle marmelos)</i> leaf extract is heated with gingelly oil and instilled as ear drops. • Oil preparation of <i>Karinotchi (Vitex negundo)</i> leaf extract is applied daily on the head. • Milky latex of <i>Ezhilampalai (Alstonia scholaris)</i> is mixed with oil and is slowly dropped into the ear.
19	Conjunctivitis	<ul style="list-style-type: none"> • Leaf extract of <i>Neichitti (Vernonia cinerea)</i> is used as an ear drop.
20	Toothache	<ul style="list-style-type: none"> • <i>Kuravan kandamooli (Thottea siliquosa)</i> root is made into a paste and is applied over the affected area.
21	Spinter in throat	<ul style="list-style-type: none"> • <i>Mullurukki (Ipomea quamoclit)</i> leaf paste is applied over the throat.
22	Obesity	<ul style="list-style-type: none"> • <i>Arogya pachi (Trichopus zeylanicus)</i> samoolam is dried, powdered, and consumed with water. • Plant extract of <i>Brahmi (Bacopa monnieri)</i> is mixed with honey and taken.
23	Piles	<ul style="list-style-type: none"> • <i>Pata (Cyclea peltata)</i> root powder is mixed with curd, intake one spoon daily.
24	Diabetes mellitus	<ul style="list-style-type: none"> • <i>Nilappanai kizhangu (Curculigo orchioides)</i> root is dried, powdered and about 5gm is made into pills with coconut milk and administrated with lukewarm water. • <i>Adapathiyam (Holostemma adakodein)</i> is dried, powdered, and administrated with lukewarm water. Dosage: 2gm • A mixture of <i>Seenthil (Tinospora cordifolia)</i> extract (15ml) and half spoon turmeric powder is taken.
25	Body itching and psoriasis Skin disease	<ul style="list-style-type: none"> • <i>Karudankizhangu ennai (Aristolochia indica)</i> can be applied over the lesion. • <i>Erukkan paal (Calotropis gigantea)</i> is applied over the rashes, Chirattai thylam can be applied externally.
26	Cholera	<ul style="list-style-type: none"> • Fruit extract of <i>Munthiri (Anacardium occidentale)</i> is kept in a glass bottle and placed in a dung pit for 6 months and taken. it is administrated with half spoon of salt.
27	Tinea pedis	<ul style="list-style-type: none"> • <i>Enamkolli (Begonia malabarica)</i> leaf paste is applied over the affected area.
28	Warts	<ul style="list-style-type: none"> • <i>Puliyarai (Oxalis corniculata)</i> iliai extract and <i>Vengayam (Allium cepa)</i> ilai extract are mixed and applied over the area.
29	Premature grey hair	<ul style="list-style-type: none"> • The inner part of the wood of <i>Vengai (Pterocarpus marsupium)</i> is boiled in gingelly oil and applied to the scalp.
30	Promote lactation	<ul style="list-style-type: none"> • 20gm of <i>Adapathiyam (Holostemma adakodein)</i> kizhangu paste is consumed with cow's milk on empty stomach. • 30 gm of <i>Nilappanai kizhangu (Curculigo orchioides)</i> paste is consumed with cow's milk on empty stomach. • <i>Thumbai (Leucas aspera)</i> poo chaaru is mixed with milk and boiled to make a paste.

Table.no - 4: Plants used for treating Toxic conditions by Traditional healers.

Sl. No	Disease	Treatment
1	Snakebite	<ul style="list-style-type: none"> • Decoction of <i>Valampuri (Helicteres Isora)</i> kai is administrated at a dose of 15 – 30ml twice a day • Juice of <i>Siriyangai (Polygala arvensis)</i> leaves (50ml) with milagu (<i>Piper nigrum</i>) (2) is given twice a day • <i>Akayagarudan (Corallocarpus epigaeus)</i> paste is rubbed between the bamboo sticks and applied over the affected area. • <i>Neerooti kizhangu (Chlorophytum laxum)</i> paste is applied over the affected area. • Tribals use poison stone (a ball, made of certain medicine) to drain off the venom. The stone is attached to the wound and it detaches off only when it has drained off the entire venom. the patient is given a bath in hot water only after the stone is detached.
2	Spider bite	<ul style="list-style-type: none"> • 50ml fresh leave extract of <i>Kiranthinayakam (Ruellia patula)</i> is taken along with an equal volume of cow's / coconut milk and the leaf paste is applied over the affected area.
3	Scorpion sting	<ul style="list-style-type: none"> • The extract of <i>Thelkudukkilai (Heliotropium Indicum)</i> extract will be given.
4	All kinds of poisonous bites	<ul style="list-style-type: none"> • 10gm of <i>Avuriver (Intigofera tinctoria)</i> is heated with 240ml of water, reduced to ¼, and made into a decoction. <p>Dose: 15ml twice a day.</p>
5	All kinds of poisonous bites, food poison	<p>Astamoolam koottu:</p> <ol style="list-style-type: none"> 1. <i>Korai kizhangu (Cyperus rotundus)</i> 2. <i>Vishnu kiranthi (Evolvulus alsinoides)</i> 3. <i>Peipudal (Trichosanthes cucumerina)</i> 4. <i>Seenthil (Tinospora cordifolia)</i> 5. <i>Kanjan korai (Ocimum canum)</i> 6. <i>Adathodai (Adathoda vasica)</i> 7. <i>Thulasi (Ocimum sanctum)</i> 8. <i>Parpadagam (Mollugo cerviana)</i> <p>It can act as a blood purifier and neutralizes the toxic effects of any poisonous bites.</p>

The method of preparation (Fig. no:5) falls into six categories, viz juice extract from the fresh plant parts (38%), plant parts applied as a paste (28%), decoction (13%), a powder made from fresh or dried plant parts (11%), oil (8%), pills (2%). External applications are mostly used for skin diseases, snake bites, wounds, and internal consumption of the preparations were involved in the treatment of different ailments. Information was collected from the traditional healers and Kani tribes that share knowledge of the method of preparation and route of administration of plants to cure ailments.

Fig. no- 4: Habit of collected plants

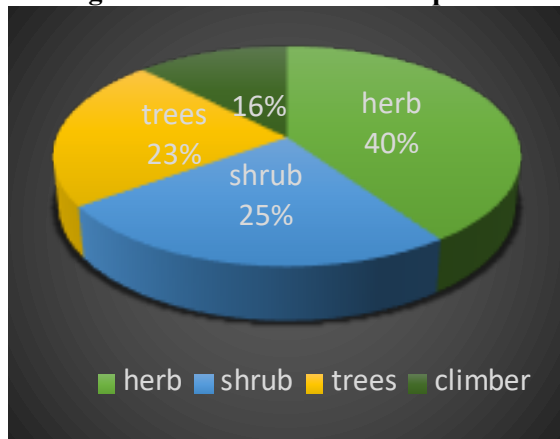
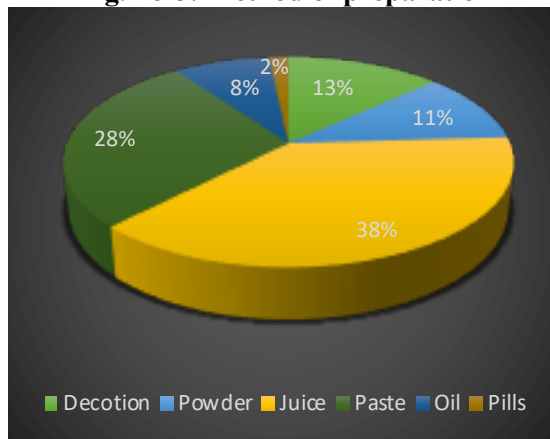


Fig. no-5: Method of preparation



Conclusion

This survey denoted that the study area has plenty of medicinal plants which can be used to treat a wide spectrum of ailments. They have good knowledge about the usage of medicinal plants that have been passed orally from generation to generation. Methods used to collect ethnomedicinal data were included semi-structured interviews, field visits with local knowledgeable persons. Informants have shared their ethnomedicinal knowledge and asked to mention all the medicinal plants known or used. The present study documented some medicinal plants used by Kani tribes which are included in the list of rare and endangered categories, so special care should be taken to cultivate and conserve these unique plants by making them available for mass cultivation, either through

conventional methods or other non-conventional methods like micro propagation and also the study indicated that the current traditional healers may be the final generation in the study area. there is a possibility of losing a wealth of traditional knowledge in near future due to rapid socio-economic and cultural changes. So, it's our responsibility to acquire and preserve the traditional system of medicine by proper documentation and identification of the specimen. The wealth of this tribal knowledge points to a greater potential for the Indian system of medicine towards research and drug discovery.

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References

1. <https://censusindia.gov.in> - Scheduled castes and scheduled tribes - Census of India dated 14-07-2021 time 22:03 IST
2. <https://www.iqbalcollege.edu.in/images/files/Summary-3.pdf> dated 17-07-2021 time 22:03 IST
3. Purushothaman T et al., Ethnobotanical Medicines Used by the Kani and Kurichiyar Tribal Communities of Kerala, Shanlax International Journal of Arts Science and Humanities 8(1):191-199
4. <https://totemngo.wordpress.com/tribes-of-kerala/> dated 17-07-2021 time 22:20 IST
5. <https://www.iqbalcollege.edu.in/images/files/Summary-3.pdf> dated 17-07-2021 time 22:03 IST
6. Chellappan Biju V et al., Therapeutic properties of *Trichopus zeylanicus* Subsp. of *Trichopus zeylanicus* Subsp. *travancoricus*, a Rare, Endangered Medicinal Plant in South India: A Review, Herbal Medicine Vol.5 No.1:2 2019
7. Pushpangadan P et al., 'Arogyappacha' (*trichopus zeylanicus* gaerin), The 'Ginseng' of Kani tribes of Agasthyar hills (Kerala) for evergreen health and vitality, Ancient Science Life. 1988 Jul-Sep; 8(1): 13-16
8. http://www.stdd.kerala.gov.in/sites/default/files/inline-files/surveyd_2008.pdf, dated 20-07-2021 time 10.15 IST
9. <https://en.wikipedia.org/wiki/Peringamala> dated 20-07-2021 time 10.30IST
10. Nusaifa Beevi P et al., A study on ethnomedicinal plants of two Kani tribal settlements of Peringamala panchayat, Kerala, International research journal of natural and applied sciences, volume 5 issue 2 February 2018.
11. Lei Fang et al., Isolation and Purification of Three Ecdysteroids from the Stems of *Diploclisia glaucescens* by High-Speed Countercurrent Chromatography and Their Anti-Inflammatory Activities In Vitro, Molecules. 2017 Aug; 22(8): 1310.

12. Douglas lobby et al., *Rauwolfia* in the Treatment of Hypertension, *Integr Med (Encinitas)*. 2015 Jun; 14(3): 40–46.
13. Dharsana J N et al., preliminary evaluation of phytochemical and antiinflammatory study of various extracts of tuber of *Anaphyllumwightii* Schott by in vitro HRBC membrane stabilizing activity, *International Journal of Pharmacy & Life Sciences*, 5(4): April, 2014:3474-3477
14. Lakshmi S et al., In vitro anticancer potential of *Anaphyllum wightii* Schott. against Dalton's lymphoma ascites cell lines and molecular docking studies of β -sitosterol, *Indian journal of experimental biology (IJEb)*, Vol 58, No 08 (2020)
15. Saiba Abdul Wahab Nusaiba and Kumaraswamy Murugan et al., *In vitro* analysis on bactericidal screening and antioxidant potentiality of leaf and root extracts of *Thottea siliquosa* (Lam.) Ding Hou. An ethnobotanical plant, *Asian Pac J Trop Biomed*. 2013 Nov; 3(11): 859–865.
16. Chavan Jayakumar J et al., In vitro propagation of *Ceropegia spiralis* Wight - An endemic and rare potential ornamental plant of peninsular India, *Proceedings of the National Academy of Sciences, India - Section B: Biological Sciences* 81:120-126
17. Supriya raja H et al., Phytopharmacological Review of *Knema Attenuata* (Hook F. And Thomson) Warb, *Int J Curr Pharm Res*, Vol 13, Issue 3, 1-3
18. Krishna Ajeesh et al., Pharmaco-Chemical Characterization and Acaricidal Activity of Ethanolic Extract of *Chassalia curviflora*(Wall Ex Kurz.) Thwaites, *Pharmacognosy Journal*, VOL 8, ISSUE 3, MAY-JUN, 201; 215-219.
19. Jacob Jenson et al., Antioxidant and anti-inflammatory properties of *Pterospermum rubiginosum* Heyne ex wight and arn and *Pterospermum reticulatum* wight and arn (Sterculiaceae): an in vitro comparative study, *Asian Journal of Pharmaceuticals and Research*, VOL 12 ISSUE 2 FEBRUARY 2019
20. Deepak M et.al, Characterization of Terpenoids Phenolic and Coumarin Compounds from Indian Medicinal Plant *Holostemma ada kodien* and Its Antioxidant Activity, *Analytical Chemistry Letters* Volume 9, 2019 - Issue 6
21. Mallikarjuna B et.al evaluated the *in vitro* antioxidant activities of hexane, ethyl acetate, and methanolic extracts of *Holostemma adakodien* root tubers.
22. Akindele et al, Gastroprotective Effects of the Aqueous Seed Extract of *Entada gigas* (Linn.) Fawc. and Rendle (Fabaceae) in Ulcer Models in Rats, *African Journal of Pharmacology and Therapeutics* Vol. 5 No. 3 Pages 155-162, 2016
23. Binu Tharakan et al., Antioxidant and DNA protecting properties of anti-fatigue herb *Trichopus zeylanicus*, *Phytother Res*. 2005 Aug;19(8):669-73.
24. Sivanandham Velavan et al., Cardioprotective effect of *Trichopus zeylanicus* against myocardial ischemia induced by isoproterenol in rats, *Bangladesh journal of pharmacology*, Vol 4 No 2 (2009)
25. Asha Jose et al., Tricaproin Isolated from *Simarouba glauca* Inhibits the Growth of Human Colorectal Carcinoma Cell Lines by Targeting Class-1 Histone Deacetylases, *Front Pharmacol*. 2018; 9: 127
26. Ivan Moises Sanchez-Hernandez et al., Nutraceutical Potential of *Cnidioscolus aconitifolius*, *ARC Journal of Nutrition and Growth*, Volume-3 Issue-2, 2017, Page No: 27-30
27. Ganesh mani et al., *Hydnocarpus alpina* Wt extract mediated green synthesis of ZnO nanoparticle and screening of its anti-microbial, free radical scavenging, and photocatalytic activity, *Biocatalysis and Agricultural Biotechnology* Volume 19, May 2019, 101129
28. Sudha C G et al., *In vitro* propagation of *Decalepis arayalpathra*, a critically endangered ethnomedicinal plant, *In Vitro Cellular & Developmental Biology - Plant* volume 41, pages648–654
29. Singhal A K et al., Wound healing activity of *Argyria nervosa* leaves extract, *Int J Appl Basic Med Res* 2011 Jan;1(1):36-9.
30. Ramesh N et al., Phytochemical and antimicrobial studies of *Begonia malabarica*, *Journal of Ethnopharmacology* 79(2002):129-32
31. Rajani M B et al., A review on medicinal uses, pharmacology and phytochemistry of *Aristolochia tagala* Cham. An endangered medicinal plant, *Journal of Pharmacognosy and phytochemistry* 2020; 9(4): 580-583
