Ethnobotanical Medicines Used by the Kani and Kurichiyar Tribal Communities of Kerala

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T. Purushothaman
Head, Department of Biotechnology and Research
Shri Nehru Maha Vidyalaya College of Arts and Science, Coimbatore, Tamil Nadu, India
https://orcid.org/0000-0002-5030-4606

K. Irfana Mol
Department of Biotechnology and Research
Shri Nehru Maha Vidyalaya College of Arts and Science, Coimbatore, Tamil Nadu, India

Abstract
The nature endowed with hidden resources of biodiversity comprises of various flora and fauna. The indigenous knowledge about the ethnobotanicals is vital for the conservation of traditional medicine as well as for future research. The documentation of indigenous medicine through botanical studies is also one of the aspects of the conservation and utilization of biodiversity. Kerala has many diverse ethnic tribal communities, and they are still following the traditional system of healing with the help of various biological resources. Each tribal communities have different lifestyles, and they are distributed in the various parts of Kerala. The tribals possess a traditional knowledge of uses of medicinal plants and employ different plants for curing diseases and infections. But, this valuable information is not documented properly. The tribal communities, along with their knowledge, have been diminishing due to the vanishing of forests as well as rapid modernization. But, the proper documentation and utilization of indigenous knowledge of tribes about the diverse medicinal plants will be useful for the development of novel drugs. Hence, we have attempted for the documentation of valuable tribal knowledge on medicinal plants, which would potentially serve as a useful reference for future researches. This article provides the list of plants used by the selected primitive tribal group of Kerala such as Kani, and Kurichiyar to treat various diseases.

Keywords: Tribes, Medicinal plants, Tribal communities, Ethnomedicines, Indigenous knowledge, Kani and Kurichiyar.

Introduction

The natural products obtained from plants have become the basis for healing the diseases. Herbal medicines are gaining attention over the allopathic medicines due to the various side-effects. The plants are the major source for treating diseases. The extracts prepared from the various plants are used as potential therapeutic agents. Today, the majority of the drugs are produced via isolating the bioactive compounds present in the medicinal plants. The knowledge about the utilization of medicinal plants is more prevalent among the indigenous people, who secures the knowledge from their ancestors. The tribes are the people who rely on flora and fauna in the forest, and they possess a unique knowledge of plants that are commonly unknown to the outside world. They usually have less contact and communication with the rest of the population. Tribal people employ the extracts of plants, decoctions, powder, pastes for the treatment of many diseases. The utilization of medicinal plants for treating health ailments was created by tribal people before thousands of years.

The ethnic groups serve as the repositories for the conservation of knowledge on traditional herbal medicines. The tribal communities have been employing several plants and animal products for the preparation of medicines, and those medicines are known as ethnomedicines. Usually, the tribal groups make use of local or nearby plants in and around the settlements for healing the illness. They have been gone through many trials for the identification of herbs for the diseases. The ethnomedicinal knowledge obtained by the tribal community pass to their generation as part of cultural heritage. Several studies have suggested that the tribal dwelling in remote areas depends on the plant resources for their food, fuel, medicines, and also for the conservation of natural resources. Kerala is blessed with natural resources that comprise of rare medicinal plants. The healthcare needs of tribal communities in Kerala are satisfied by making use of non-timber forest products and the medicinal preparations based on conventional knowledge. The awareness about the medicinal values of the plants are not only useful for the conservation but also for the primary health care bad development of drug. Traditional healers have immense knowledge of indigenous medicines over the distinct species of flora and fauna. Usually, these traditional knowledge are taken to the next generation. The indigenous medicinal system also promotes the identification of new medicinal plants, and it will lead to the extraction of beneficial and effective bioactive compounds. More than 80% of peoples in the developing country still depends on indigenous medicines because it is considered safe. The tribes have acquired knowledge of the indigenous medicinal system is a unique aspect, and they generated diverse ethnomedicines. The knowledge about the conventional medicinal plants and their utilization in the indigenous system is considered as useful not only for the conservation of traditional cultures and knowledge but it also paves the way for the development of drugs against various diseases. The various parts of plants such as leaves, stem, bark, root, fruits, flowers, etc. possess active ingredients that have a crucial role in the development of useful drugs. Most of the knowledge acquired by the tribal group on several medicinal plants are still unknown to the scientific community. The collection and documentation of ethnobotanicals and indigenous knowledge have become noticeable aspects of drug discovery and development. There is a wide arrange of medicinal preparations that are believed to be existing in tribal knowledge and practices. The tribal medicines provide a wide range of scope for medicinal research. Generally, the tribes have superstitious beliefs, and so some of them do not reveal their herbal knowledge, which ultimately leads to the loss of particular medicinal preparations. So the interaction among tribes and the documentation of ethnomedicines are the prominent aspect for future research and drug development. Hence, in this review, we have tried to list out some of the medicinal plants used by the selected primitive tribal communities of Kerala such as Kani and Kurichiyar.

Tribes of Kerala

Kerala is enriched with distinct natural resources, and it is considered as the homeland for many tribal groups. The prevalence of traditional medicine and practices among the rural peoples in Kerala have traced back to olden days. The tribes belong to the minority community, and they are not advanced in literacy, social, and economic aspects. But, they have a broad spectrum of knowledge on medicinal plants. Kerala has a large population of tribal communities settled in various districts. These tribal groups belong to various ethnic groups. There are about 36-40 tribal communities in Kerala. The major tribes of Kerala are Kani, Kurichiyar, Kani, Kurumar, and kattunaikkan. These tribal communities have immense knowledge about the use of fauna and flora. Each tribal communities have their own social and cultural identity. They usually inhabit the forest and undergo the nomadic lifestyle. Most of the tribal communities reside in the hilly areas of the state. The tribal groups are distributed in almost all districts in Kerala, whereas the majority of tribes are concentrated in the Wayanad, Palakkad, Idukki, and Kasargod. The least number of tribal population was seen in Alappuzha district.

The "Adivasi" is the term generally used to denote the Tribes in Kerala. The tribal population in Kerala mainly depends on the agricultural and their related activities, and some of the tribal groups are engaged in hunting as their occupation. The tribes of Kerala usually follow non-vegetarian dietary habits. The Western Ghats are inhabited by most of the tribal communities. But the exposure towards the modern education and media have influenced to change their traditional life habits and practices. The important tribal communities of various districts in Kerala are given below,

- Kurichiya: Wayanad
- Kani: Nedumangad, Palakkad

Kani

Kani or Kanikar is one of the primitive tribal groups in Kerala. They are distributed in and around the Agasthyarkoodam (AgasthiyarMalai), situated at the Western Ghats in the Trivandrum district of Kerala. The Kanis was believed that have been brought by the Sage Agasthiyar, and the term "Kanikkaran" means "Holder of the land" or "landowner." They live in the interior forest with adequate water sources. Hence, they are interested in fishing as well as hunting. Kanis usually leads a nomadic life, and the chief of this tribal community is called "Moottukani." The tribal chief (Moottukani) has to play the role of a physician, protector, priest, and the lawgiver during the olden days. They usually live in the different tribal hamlets comprising of 10-20 families interspersed within the forest. The conventional occupation of Kani tribes includes mat making, basket making, and cane work, and occasionally, they are also involved in the collection of bee wax and honey. They live in harmony with nature, and they do not depend on modern agricultural implements for their survival. They cultivate food plants such as pineapple, coconut, millets, cashew nuts, jack fruits, etc. The language used to communicate with each other resembles Malayalam, and that is mixed with Tamil terms.

They have a distinct lifestyle when compared to the general population in the Trivandrum. The moottikani has vast knowledge in treating several diseases among the tribal population. They have gained the wisdom of traditional healing procedures from their ancestors. The Kani tribal group has significant knowledge of medicinal plants to heal the common health ailments, which made them unique from other tribes. The Kanis commonly preferred to use the medicinal plants in the form of extract, powder, decoction, and paste. They may use single herbs, or the combination of more than two herbs are used for treating many diseases. The duration of administration and their dosage of these herbs may vary from the other healers.

Family	Botanical Name	Local Name	Parts Used/ Mode of Administration	Diseases
Hypoxidaceae	*Curculigo orchioides*	Nilappana	Tuber is dried and powdered, which is mixed with coconut milk to make small balls. It is swallowed along with lukewarm water.	Asthma, Diabetes mellitus
Asteraceae	*Veroniacinerea*	Poovanpacha	Juice is extracted from the crushed leaves and used as eye drops	Conjunctivitis
Zingiberaceae	*Elettariacaradamomum*	Ellakai	Leaves are allowed to boil in water and it is applied externally over the face	Cough and cold
Mimosaceae	*Acacia nilotica*	Karuvelam	The decoction made with the flowers of Acacia nilotica is applied on the surface	Cuts and wounds

Araceae	*Anaphyllumbeddomei*	Keerikkizhangu	The Paste made from the rhizome is given internally	Antidote for snake venom
Liliaceae	*Protasparagusracemosus*	Sathaveri	Tubers were crushed and boiled in water and it is consumed lukewarm	Diarrhoea
Ranunculaceae	*Naraveliazeylanica*	Mookerivalli	The stem of *Naraveliazeylanica* was dried and finely powdered. Then, the powder was tied in a clean cloth. Inhalation of aroma from the clean cloth	Rhinitis
Rubiaceae	*Chasaliacurviflora*	Vellamundan	More effective than traditional herb *Phyllanthusfraternus* (Keezhanelli)	Jaundice
Fabaceae	*Abrusprecatorius*	Atimaduram	Juice prepared from root	Jaundice
Vitaceae	*Leeasambucina*	Nekku	Juice made from fresh leaves are mixed with coconut milk given orally for thrice a day	Dysentery with blood discharge
Asteraceae	*Emilia sonchifolia*	Mutual cheviyan	Paste is made from whole-plant and applied on the surface	Wound healing and chest pain
Convolvulaceae	*Ipomeapestigridis*	Chianti pacha	• Leaf extract is consumed along with coconut milk or cow's milk • Leaf paste can be applied over the surface	Spider bite
Asclepiadaceae	*Ceropegiaspiralis*	Parayilpandam	Corn of the ceropegiaspiralis is used as food	Blood purification, syphilis
Musaceae	*Musa paradisiaca*	Vaazha	Juice extracted of leaf sheath	First aid for snake bite
Moraceae	*Ficushispida*	Erumanakku	Fruits of Ficushispida	Leucoderma
Dioscoreaceae	*Dioscoreahispida*	Vevatti	Consumption of tuber which is peeled off	Pyrosis
Passifloraceae	*Adeniahondala*	Palmuthakkan	Tuber powder or paste is taken orally along with coconut milk in empty stomach	Promotes lactation
Apiaceae	*Centellaasiatica*	Kodangal	The paste of the entire plant is applied topically	Hair diseases
Nyctaginaceae	*Pisoniagrandis*	Marakeera	Topical application of leaf paste	Arthritis

Kurichiyar

Kurichiyar is also called Hill Brahmins or Malai Brahmins, which is a tribal community found widely in Wayanad district in Kerala. They are expertise in archery and played a crucial role in the rebellion and Pazashi raja during the 19th century. The kurichiyar tribal group occupies the highest in the hierarchical order of other tribes such as Kurumba, adiya, and paniya. The name "kurichiyar" denotes "hill people" (kuri- hill; chian- people). It is one of

the largest community among the tribal groups in the hilly district. They usually live as large families, and the language used by them is the corrupt form of Malayalam. They also followed the untouchability practices among other tribal communities because they consider themselves as superior over the other tribal communities in Kerala. The head of the tribal group is known as "Pittan" or "kaaranavan." The important meetings and ceremonies are guided by the tribal chief pittan, and he also involved in discussing the issues of tribal members. They use their land, and the Pittan is the one who has the right to sell or lease the land and their properties. Besides all, kurichiyar are good hunters, and they make bow and arrow by using the bamboo and creepers. They also possess a good knowledge of herbal medicine. The main food of this tribal community is ragi porridge. They are generally non-vegetarians. The kurichiyar memo involves the ploughing of land, and the women are engaged in planting and weeding. They were originally matrilineal tribes. They followed the tradition of healing system, which would be traced back to their ancestral period. They focused on natural resources for preparing medicines. Hilly areas are blessed with various medicinal herbs, and the kurichiyar followed their way of healing. The knowledge about the medicinal plants is gained from their ancestors, and many of them in this community are not ready to show their knowledge. Plant products are prepared by using the medicinal plants collected during the different seasons. The kurichiya herbal specialist makes the preparations that range from powder, juice, extract, or paste for the administration of appropriate doses to the respective patients.

Family	Botanical Name	Local Name	Parts Used/Mode of Administration	Diseases
Malvaceae	*Abutilumhirsutum*	Oorakam	Root of *Abutilumhirsutum* was grinded	Toothache
Amaranthaceae	*Achyranthesaspera*	Kadaladi	• Application of root paste over the forehead • The whole plant is used to make a decoction which is used to bath children	Headache Fever
Euphorbiaceae	*Brideliascandens*	Nonivalli	The decoction made from the bark	Cough and asthma
Aponacynaceae	*Chilocarpusmalabaricus*	Vallippala	External application of resin from leaves on the infected area	Skin diseases
Oxalidaceae	*Biophytumsensitivum*	Mukkutti	Topical application of fresh grounded whole plant on the affected area	Antidote for poisonous bite
Commelinaceae	*Commelinabenghalensis*	Veliapadathi	Juice extract prepared from this plant is taken twice a day	Jaundice
Flacourtiaceae	*Hydnocarpuspentandrus*	Thaali	Leaves are crushed and applied on the skin	Hair growth and cooling effect
Mimosaceae	*Mimosa pudica*	Thottavadi	Tender leaves are crushed and applied topically on wounds	Wound healing

Apiaceae	*Pimpinellamonoica*	Kadajeerakam	Oral administration of seeds directly	Stomachache
Vitaceae	*Vitisquadrangularis*	Changalamparanda	Tender leaves extract applied on the body parts	Sprain
Caesalpiniaceae	*Cassia fistula*	Kannikonna	Juice made from leaves was taken internally	Mouth spores and tonsilitis
Rutaceae	*Citrus aurantium*	Cherunaarakam	Fruit juice extract is used as a mouth wash	Sore throat
Zingiberaceae	*Cucumisneilgherrensis*	Kattukoova	Paste made by using the rhizome was applied on infected skin	Skin diseases
Araceae	*Raphidophorapertusa*	Anachakkara	Leaf juice	Dysentery and diarrhoea
Icacinaceae	*Nothapodytesnimmoniana*	Ulukkuvetty	Aqueous leaf paste	Cancerous wounds and scabies
Apocynaceae	*Alstoniavenenata*	Theeppala	Leaf paste is applied on the affected area	Snake poison and skin diseases
Phyllanthaceae	*Breyniavitis*	Kurukkankombu	Leaf extract	Body pain and skin diseases
Verbenaceae	*Vitexnegundo*	Karinochi	Crushed leaves are applied on the forehead	Headache
Solanaceae	*Solanumnigram*	Manithakkali	Fresh and dried fruits are consumed orally	Ulcer
Acanthaceae	*Pogostemoncablin*	Pacholi	Essential oil prepared from leaves are used in aromatherapy	Nervous exhaustion and depressions
Fabaceae	*Buteamonosperma*	Plashu	Leaf extract	Arrest bleeding

Conclusion

The above pieces of evidence show the ethnomedicinal knowledge of various tribal communities in Kerala. The ethnobotanical studies carried out in different parts of Kerala helps us to access the knowledge about tribal medicines. Kerala is well known as the "Museum of various ethnic groups of traditional medicines." The tribal people live about natural resources, and so they have immense knowledge about the rare medicinal plants and its uses. The tribal people mainly rely on plants to cure many diseases and infections. The tribal communities distributed in the various parts of Kerala shows the distinct utilization of medicinal plants. But, nowadays, the tribal communities and their heritage are started to diminish due to urbanization, deforestation, and industrialization. The tribes employ the different parts of plants such as stem, fruits, leaves, bark, latex, root, rhizome, etc. for healing the diseases. The lifestyle of tribes has proven that plants are the potential source for treating many diseases and also for the maintenance of good health. So, the documentation of medicinal plants used by tribal communities will lead the way to acquire knowledge as well as for the development of novel drugs against various life-threatening diseases. Hence, more studies and researches must be carried out to find out the ethnobotanical knowledge among the tribal groups.

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Author Details

T. Purushothaman, *Head, Department of Biotechnology and Research, Shri Nehru MahaVidyalaya College of Arts and Science, Coimbatore Tamil Nadu, India,* ***Email ID****: purushonlines@gmail.com*

K. Irfana Mol, *Department of Biotechnology and Research, Shri Nehru Mahan Vidyalaya College of Arts and Science, Coimbatore, Tamil Nadu, India*