

Ethnomedicinal plants used by *Kani* tribes of Agasthiyarmalai biosphere reserve, southern Western Ghats

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The paper deals with some less known ethnomedicinal uses of 15 plant species belonging to 13 families. These plants are used as effective remedies by tribals of Agasthiyarmalai region of southern Western Ghats.

Keywords: Ethnomedicine, *Kani*, Southern Western Ghats

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India has a glorious tradition of the arts and science of healing. The origin of Indian medicine is shrouded in 'myths' and 'inspired history'. But, organised medicine, Ayurveda emerged from folk medicine at least 2,000 yrs ago with its well developed recorded system and practices. It is reported that over 20,000 plant drug formulations are listed in Ayurvedic pharmacopoeia. In addition, nearly 60,000 are believed to be in existence in the folk and tribal knowledge and practices¹. Our ancient literature has references of plants reputed to cure difficult and incurable diseases². The maximum numbers of medicinal plants are used by folk (tribal) traditions. There are over 53 million tribal people in India belonging to 550 communities of 227 ethnic groups. They inhabit about 5,000 forested villages or lead a nomadic life in the forest. Each tribal community has a distinct social and cultural identity of its own. In Kerala, the tribal communities are nearly 40 in number. Some of them are very primitive and most are advanced. The major groups of tribes in Kerala are, *Kani*, *Adiyar*, *Paniyar*, *Kurichiar*, *Koragar*, *Kurumar*, *Kattunaykar*, etc³. *Kanis* mainly inhabit the forests of Kerala-Tamil Nadu border, which is located in the southern most part of Western Ghats

known as *Agasthyar Koodam*. It is believed to be the sacred abode of the great saint *Agasthya* and the heaven of medicinal herbs⁴. It has one of the most diverse biological resources in the region. The knowledge about tribal medicine is on the way to extinction because of the negligence and the absence of documentation. Tribals have vast knowledge about traditional medicine for various diseases. Since the tribes have some superstitious beliefs they do not reveal the medicinal secrets to others. Thus, a particular medicinal treatment is lost with the death of the knowledge holder. Interactions with the tribal people could reveal very little information. Therefore, the study was planned to document the medicinal plants used by *Kani* tribes of Agasthiyarmalai malai to cure various diseases.

Methodology

Agasthiya forest situated in Sahya ranges in the Kerala-Tamil Nadu border lies between 8° 30' and 8° 38' N lat and 77° 8' and 77° 17' E longitude, abounds in multifarious fauna and flora and is one of the biodiversity hot spots of the world. The thick forest spread over Mount Sahya extending between Kerala and Tamil Nadu, supports different types of medicinal plants gradual destruction. The climate of this region is moderately hot and humid. The

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temperature varies from 16°C-35°C. The mean annual rainfall is 2,800 mm and the tract receives both southwest and northeast monsoons. Due to the varied climate and topographic conditions, the forest shows remarkable diversity of vegetation⁵.

For the ethnobotanical investigation, three tribal settlements in *Agasthiya* forest were selected. The Chonanpara tribal settlement is located in *Agastyar Koodam* near Kottoor, situated about 40 km away from Thiruvananthapuram, the capital of Kerala. *Klamala* tribal settlement area is situated near Aarukani in Kanyakumari district of Tamil Nadu. Aarukani is located in the Kerala border, about 45 km away from Thiruvananthapuram. The Plavilamala tribal settlement area is located about 75 km away from Thiruvananthapuram near Manalodai in Kanyakumari district of Tamil Nadu. The study was conducted using survey method. A questionnaire was used for collecting the details about tribal medicine and their sources (Table 1). The medicinal plants were collected and identified by using regional and local floras and the standard methodologies were adopted for herbarium preparations⁶⁻¹². The voucher specimens were deposited at the Christian College, Kattakada for future reference.

Results and discussion

The survey conducted among *Kani* tribes gives valuable information about a number of medicinal plants and their uses. Certain interesting beliefs

existing among them could be understood. Following observations about different plants were observed:

Anaphyllum beddomei Engl. (Araceae)

Commonly known among the tribes as *Keerikkizhangu* is found only in thick forest and used as an antidote for snake venom. The plant rhizome paste is given internally. The *Kani* people believe that, this plant has the power of God and people who are going to collect this plant must have a pure mind. The man who has the blessing of God can only see the plant. It is also believed that to make it more effective, it is given with the urine of a man, if the patient is female and *vice versa*. This medicinal preparation is also used externally against snake poison by *Malayarayan* tribes in Idukki district of Kerala¹³.

Andrographis paniculata Nees (Acanthaceae)

A small herb, known among the *Kani* tribes as *Kiriyathu* or *Nilavepu* is used as an effective medicine for the treatment of cough and fever. This medicinal treatment is also popular in among the *Mannans*, which is a tribal community in Idukki district of Kerala¹³. This plant is common throughout the Indian plains¹⁴.

Apama siliquosa Lamk. (Aristolochiaceae)

The root of the plant, known among the *Kani* tribes as *Kuravan Kanda* or *Kuttilla vayana* is used for the treatment of stomach ache, chest pain, and some skin disorders.

Ceropegia spiralis Wt. (Asclepiadaceae)

Distributed in Eastern Ghats, Andhra Pradesh, Cuddapah and South Karnataka (Hassan), Southern and Western Ghats in Kerala and Tamil Nadu is commonly known among the *Kani* tribe as *Parayilpandam*¹⁵. The corm of this plant is used as food for blood purification and syphilis. The tribals believe that healing power of *Ceropegia spiralis* would be rendered ineffective if its healing properties are divulged.

Chasalia curviflora Thw. (Rubiaceae)

Commonly known among the *Kani* tribe as *vellamundan*, is an effective medicine for the treatment of jaundice. It is believed to be three times more effective than the commonly used medicinal plant, *Keezhanelli* (*Phyllanthus fraternus*).

Table 1—Questionnaire used for ethnobotanical investigation

Questions

- What are the various common diseases in your locality?
- Are you depending on the hospitals for the treatments?
- What do you do, when you are affected with the diseases?
- Please name out some of the medicinal plants you are using?
- Name the diseases, which can be cured by above-mentioned plants?
- Which part of these plants is used as medicine?
- Can we see these plants all over the forest?
- Will you help us to collect some sample of these plants?
- Are you giving any instructions for the usage of the medicinal plants?
- If it so, what are the instructions?
- Any religious believes behind it?
- Do you believe that, the plants are the best remedy for the diseases?
- Can you give 100% surety over the medicinal effect of the plants?
- What are the various common diseases in your locality?
- Are you depending on the hospitals for the treatments?
- What do you do, when you are affected with the diseases?

Curculigo orchioids Gaertn. (Amaryllidaceae)

Tubers are used to induce lactation in nursing mothers. It contains a large quantity of starch and the *Kanis* believe that to make this medicine more effective, it should be prepared only by the patient.

Cyclea peltata Hook.f. & Thoms. (Menispermaceae)

A climber, commonly known among the *Kani* tribe as *Padakathalli*, *Pillathali* and *Karppakavalli* is used for the treatment of diarrhoea, wounds, and certain skin disorders. The common belief is only one person should pick the tuber at a time. The *Garo* people around the Balphakrum sanctuary in Meghalaya use the roots of these plants for the treatment of smallpox¹⁶. The roots of *Cyclea peltata* are used as a medicine for stomach ache in Kannur district of Kerala¹⁷.

Emilia sonchifolia DC. (Asteraceae)

A small herb with leaves having the shape of the pinna of rabbit is called by the tribes as *Muyal chevian*. The *Kani* tribes apply the paste made from the entire plant body to wounds for fast healing and for chest pain. The *Mannan* tribe in Iddukki district also use this plant to relieve chest pain¹³.

Euphorbia hirta Linn. (Euphorbiaceae)

A small herb commonly known among the tribes as *chittirapala* is used for the treatment of urinary problems and some skin diseases. In Ayurvedic system, plant known as *Dugdhika*, *Ksheerini* or *Swaduparni* is used for the treatment of diabetes, fever, cough and asthma. Linositol has been isolated from this plant¹⁸.

Ficus hispida Linn. (Moraceae)

The fruits and bark of the plant, *Erumanakku* are used for the treatment of leprosy, blood purification and for inducing lactation. The medicinal preparation using this plant should be made by a single person and metal implements should be avoided when preparing the medicine. *Ficus hispida* fruit is used against a type of skin disease called, *srwitha* (leucoderma)¹⁹.

Gloriosa superba Linn. (Liliaceae)

Tuber paste of the plant, Known among the tribes as *menthoni* or *Karal vatti* and *kalihari* in north India is applied externally on the head to accelerate childbirth. It is believed that the tubers that grow in

the northern direction with a horizontal basal portion and northwardly growing distal portion are the ones to be used. The basal portion is made into paste and applied on the head of women undergoing labour. Soon after the parturition, the paste made of the distal portion, called *keezhthonni* of the same tuber, is applied on the head for vaginal contraction. It is also used as antidote against some poisons. The tuber is ground in coconut milk and drunk thrice in a day for three days. The common belief of tribals is that the medicinal use of this plant must be secret. The plant is use for the treatment of leprosy, parasitical infections of the skin, piles, and colic. The starch obtained from the tuberous root is given internally in gonorrhoea¹⁴.

Leea sambucina Willd. (Vitaceae)

Leaf juice of the plant, *nekku* mixed with coconut milk is given orally, thrice a day for the treatment of dysentery with blood discharge. The *Kanis* believe that spreading information about the plant leads to the destruction of its medicinal effect.

Musa paradisiaca Linn. (Musaceae)

Kani tribe use the juice extract of its leaf sheath as a first aid medicine against snake venom; the juice prevents the spreading of snake poison in the body.

Ruellia patula Jacq. (Acanthaceae)

Known as *Chilathi pacha* is used as a single drug remedy against the deadly poison of *Kaduva chilanthi* (Tiger spider). The *Kanis* believe that the *Kaduva Chilanthis* are the incarnations of evil spirits and considered as the representatives of devil.

Sansevieria roxburghiana Schult.f. (Liliaceae)

Leaves of the plant, commonly known among the tribes as *Marachada* or *Valank* is used for the treatment of ear pain. In Ayurveda, rhizome juice of *Nadagamani* or *Sarpapola* is prescribed for long standing coughs. An alkaloid, sansevierine has been isolated from the plant¹⁸.

The medicines were prepared from various parts of plants such as flower, seeds, bark, leaves, roots and stem. The content of drug in a plant is influenced by locality (place of cultivation or natural occurrence), time of collection (morning or evening), stage of growth (opened or unopened flowers, young or mature leaves, pre or post flowering stage) and season (summer or rainy), etc. The exact season for collecting plant is very important. Avoiding picking

of plant parts in extremely dry and rainy season had been suggested²⁰. The fresh herbs contain a variety of nutritive and therapeutic constituents. These include volatile oils, tannins, terpenoids, saponins, anthraquinones, flavonoids and alkaloids²¹. The tribal traditional medical system has fewer side effects. It is observed that both tribal and Ayurvedic Systems of Medicine are giving certain instructions and precautions to the patients about the type diet to be taken to prevent side effects. *Chasalia curviflora* is one of the medicinal plants used, as the medicine for the treatment of jaundice, needs avoidance of foods like ghee, salt and turmeric for at least 90 days. However, they have some superstitious beliefs about diseases and medicinal treatments. Although the beliefs among the tribes are considered as superstitions, if analysed them carefully, we could see that, most of these beliefs are for the protection of medicinal plants.

Conclusion

The tribes have a well-developed system of traditional medicine. They know about number of rare medicinal plants and their applications. But, all this knowledge is gradually lost by some superstitious beliefs of these ethnic groups. They do not reveal the knowledge to others because of the fear that, if they did so, the healing power of the plants may be lost. Even though these beliefs have certain advantages, a lot of valuable knowledge has been lost by this way. Another problem with tribal medicine is the absence of recorded data. Numerous ancient knowledge has been lost by the absence of supportive literature. A major reason for this is the illiteracy of the tribes. Further, a large number of medicinal plants are being threatened due to deforestation and urbanisation. In these circumstances, ethnobotanical and ethnomedicinal studies have great significance in the collection of traditional knowledge, preparation of recorded data and in the conservation of endangered medicinal plant species. With the help of new technologies, the data could be scientifically proved, so that the scientific world will accept the traditional systems. Nature is providing what we need and our task is to save nature for posterity.

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