



# Indigenous knowledge based traditional medicinal practices of Kasargod District Northern part of Kerala

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## Abstract

The present study reports the medicinal plants used by different tribal communities residing in Kasaragod District, Kerala. Floristic and ethnobotanical tribal knowledge was collected through extensive field visit and observation. Total 43 of plants and their vernacular name, plant parts used and method of preparation were recorded. The medicinal potentialities of plants are highly important and could be explored to formulate drugs in pharmaceutical companies.

## 1. Introduction

Since the beginning of civilization, people have used plants as medicine. Also, plants continue to be a major source of medicines, as they have been throughout human history (Farnsworth *et al.*, 1991). Medicinal plants thus play a vital role in the maintenance of human health throughout the world and notably in the tropics. Interestingly, many of today's drugs have been derived from plant sources. It is estimated that, plant materials are present in or have provided the models for 50% western drugs (Robbers *et al.*, 1996). Historically all medicinal preparations derived from plants either in simple or combination of plants in the form of crude extracts. Nowadays number of drugs developed from plants, which are active against number of diseases. In developed countries 25 percentage of medicinal drugs are based on plant derivatives. The use of medicinal plants is well known among indigenous people in rural areas of many developing countries (Binu Thomas and Rajendran, 2013).

Ethnobotany explores the direct relationship of plants with man. The term has often been considered as a synonym of traditional knowledge or economic botany. Botanical ethnography deals with the scientific description of the role of plants in the life of any ethnic group or race and these tribes are live in close association with nature, they depend the natural resources through sustainable utilization (Jain, 1991). Several studies have related that tribal population in remote area, not only depend on plant-based resources for medicines, food, forage, and fuel, but also play a vital role in the management of natural resources (Ignacimuthu *et al.*, 2006; Ragupathy *et al.*, 2008; Ragupathy and Newmaster, 2009). Tribal communities in Kerala meet their healthcare needs by using non- timber minor forest products and preparations based on traditional knowledge. Further, it has been established that herbal drugs obtained from plants are safe in treating various ailments with few side effects (Ayyanar and Ignacimuthu, 2005).

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The Western Ghats region of Kerala is a great emporium and treasure house of ethnobotanical wealth. Tribal medicine offers a vast scope for medicinal research. The present study is an attempt has been made to document some of the medicinal plants, which are used by different tribal group of Kasaragod district to cure the ailments.

## 2. Methodology

**2.1 Study area:** Kasaragod District, Northern district of Kerala which lies between 12.5°N latitude and 75.0°E Longitude. North and east bounded by Karnataka state, south by Kannur

District and west by Arabian sea. It has an average elevation of 19 metres (62 feet). The district receives an average of about 3500 mm rainfall annually. The major source of rainfall is Southwest monsoon from June to September which contributes nearly 85.3% of the total rainfall of the year. While Northeast monsoon contributes nearly 8.9% and balance of 5.8% is received during the month of January to May as pre-monsoon showers. The average mean of monthly maximum temperature ranges from 29.2 to 33.4<sup>0</sup> C and minimum temperature ranges from 19.7 to 25<sup>0</sup> C. (Fig.1).



Fig.1. Map of the Kasaragode District

## 2.2 Ethnic group

Kerala is a homeland of number of tribal communities. Majority of them are inhabited in the western slope of Western Ghats. There are about 36 communities are listed in scheduled tribe list of the state as per 1991 census record. Out of these, there

are four types (*Koragas, Marattis, Mavilan, and Malavettuvas*) of scheduled tribal people are visited by the authors for documenting the valuable traditional knowledge regarding some medicinal plants, which are utilized by them for treating against various ailments.



*Koragas*: One of the most primitive tribes, living in Kasaragod Taluk only. The traditional occupation of these people is basket and skep making. They speak tulu and kannada. These people are backward financially, educationally and as well as culturally. The community is superstitious and reluctant, the head of their hamlets are also called as Gurukara, who controls all socio- religious activities in a hamlet.

*Marattis*: They are educationally and culturally forward in comparison to the other tribes in the district. They are utilized various plant species for curing different ailments in their daily life. They also cultivate some vegetables and crops for their dietary requirements.

*Mavilan*: These are also a tribal community inhabited in the Kannur and Kasaragod Districts of North Kerala. In the past, they were dependant on forest and forest products. They had been leading a hunting, gathering and horticulture way of life until the encroachment of Janmi (landlord) to their habitat. Their major settlements of *Mavilan* are seen in Chengala, Puthigae, Karadukka, Kodom, Belloor, Kinnanur, Karimthalam, Badiyadukka, Balal, Kallar and panathady panchayath.

*Malavettuvan*: They are distributed only in the Ghat areas of Kasaragod and Kannur Districts. They speak a dialet of Malayalam and Tulu. The headman of Malavettuvans was called '*Kiran*' who according to tradition was appointed by their respective landlords. The '*Kiran*' took orders from their landlord and supplied manual workers to the landlords. Traditionally *Malavettuvans* are experts in

'*Punamkothu*'. Now they subsist mainly on agriculture labour. However, the community is organised and ready to respond to development initiatives. They reside in 7 Grama Panchayats, namely; Kuttikol, Balal, Kallar, Kodombelur, East Eleri, West Eleri and Kinanoor-Karinthalam have sizable population of Malavettuvan community.

### 2.3 Data collection

Ethnobotanical information was gathered from the indigenous peoples of the study area. The indigenous group uses herbal formulations of different medicinal plants to treat common ailments. During the course of exploration ethnobotanical information about plant is rather specialized and is limited to elder members in community who recognized as vaidyar. Information collected through rapids rural appraisal. Details of medicinal plants used, was documented by direct observation as well as through participatory rural appraisal (PRA) and rapid rural appraisal (RRA) along the study area

### 2.4 Ethnobotanical data collection

Ethnobotanical data were collected between October 2020 and January 2021, based mainly on semi-structured interviews with selected knowledgeable elders. Information regarding the gathering, preparation, use, previous and current status and cultivation practice of medicinal plants were collected. Interviews and discussions were conducted in their common local language in the study area. A total of 70 knowledgeable elders (47 men and 23 women), between the ages of 20 and 80 (the majority in the age class of 41-50 years)

were selected. The knowledgeable elders were selected with the help of local administrators. The medicinal plants were collected from the study area were identified by using available and literature.

### 3. Results & Discussion

Kasaragod district have variety medicinal plants used by tribal for their primary health care. The present study documented there are about 43 plant species belongs to 41 genera and 30 families. These plants are used commonly by the tribal as well as local inhabitants of Kasargod District of Kerala to cure various ailments such as skin diseases, eye problems, cuts and wounds, cough and fever, diabetics, diarrhoea and dysentery, poisonous bites etc. (Table-1). Now a day's modern culture and urban practices are also influenced the young generation of various tribal people in the country. Due to less side effects and better immunity by using herbal formulations, tribal people are generally used such medicinal plants which are distributed in and around them to cure various diseases.

Similar studies were also recorded. There are about 26 medicinal plants which are extensively used by local people of Ponneri, Thiruvallur district, Tamilnadu and used for the treatment of skin problems, cold, fever, headache, Gastro-Intestinal problem, Jaundice, Swelling in Joints, Toothache, poison (Surabi *et al.*, 2018).

An ethno botanical survey was conducted in 6 randomly selected panchayaths of Vythiri taluk of

Wayanad district, Kerala investigating the tribal healing systems and they identified 67 medicinal preparations involving 67 species of plants belonging to 44 families used for medicinal preparations by tribals in that area (Devi Prasad & Shyma, 2013). The traditional healers of Kancheepuram district, Tamilnadu, india, used 85 species of plants distributed in 76 genera belonging to 41 families to treat various diseases. The documented medicinal plants were mostly used to cure skin diseases, poison bites, stomach ache and nervous disorders (Muthu *et al.*, 2006).

Traditional wound healing plants used by rural communities of Kasargod district, Kerala, India documented 64 plant species for healing treatment. 52 Single plant remedies and 10 polyherbal formulations were used by the traditional healers of Kasaragod district (Rajith *et al.*, 2016). A survey on ethnomedicinal uses by *Kuruma* tribals of Wayanad district identified 34 plant species belonging to 32 genera and 25 families used for cuts and wounds traditionally and leaves were the major part used by them (Binuet *et al.*, 2014). Similarly, an ethno botanical study of medicinal plants used by traditional healers in silent valley of Kerala showed that a total of 102 species of plants were distributed in 95 genera belonging to 53 families used by traditional healers for the treatment of 19 ailments (Yabesh *et al.*, 2014).



**Table-1 List of Medicinal plants and their uses**

Sl no	Scientific name	Family	Vernacular Name	Useage
1	<i>Adenocalymma alliaceum</i> Miers	Bignoniaceae	<i>Velluthulliched</i>	Root powder used for the preparation of decoction which effective against uterine disorders
2	<i>Aegle marmelos</i> L.	Rutaceae	<i>Koovalam</i>	Fresh fruit or fruit pulp grounded makes paste. the extract used orally to cure Liver cirrhosis
3	<i>Alternanthera canella</i> L.	Amaranthaceae	<i>Cherucheera</i>	Leaf and stem extract administered orally against spider attack
4	<i>Aristolochia indica</i> L.	Aristolochiaceae	<i>Urithooki</i>	Root and leaf make in to paste which is mixed with milk and rice medicated rice used against Snake poison
5	<i>Asparagus racemosus</i> (Willd.) Oberm.	Liliaceae	<i>Sathavari</i>	Dried rhizome powder one teaspoon mix with milk, taken twice daily to cure urinary disorders
6	<i>Baliospermum montanum</i> Blume.	Euphorbiaceae	<i>Nagadandi</i>	Stem bark and leaf extract along with rice water administered orally against ulcers
7	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	<i>Thazhuthama</i>	Fresh whole plant sliced make into a paste the paste filtered by using cotton cloth filtered extract use thrice in a day for eye disease.
8	<i>Capparis zeylanica</i> L.	C apparaceae	<i>Karthotti</i>	Leaf and stem boiled in water the medicated water called vethu which used against Arthritis



9	<i>Senna occidentale</i> L.	Caesalpiniaceae	Anathakara	Crude extract of leaf used against whitefields
10	<i>Chromolaena odorata</i> (L) King & Rob.	Asteraceae	Communistpacha	Fresh leaves boiled with water the medicated water used to cure chikunguniya
11	<i>Cissus quadrangularis</i> L.	Vitaceae	Changalamparanda	Stem extract applied externally on bone fracture, ear ache
12	<i>Commelina bengalensis</i> L.	Commelianceae	Neelolpalam	Crused juice of herb is given twice a day for tratment of jaundice
13	<i>Cyanoglossum zeylanica</i> L.	Boraginaceae	Thumbakoduveli	Intact plant crude extract used against diarrhoea
14	<i>Drosera indica</i> L.	Droceraceae	Urmbutheeni chedi	Intact plant makes into paste, plant extract mix with water used against Diabetes mellitus
15	<i>Ensetae superbum</i> Roxb.	Musaceae	Kalluvazha	Powdered seed mixed with milk used against Gynac problems
16	<i>Erythrina indica</i> Lam.	Fabaceae	mullumuriku	Fissured bark grounded into paste. Paste used externally to relieve Heat burns
17	<i>Ficus benghalensis</i> L.	Moraceae	Almaram	Leaf bud boiled with milk used to cure infertility problems
18	<i>Ficus religiosa</i> L.	Moraceae	Arayal	Three Leaf bud or bark extract mix with boiled milk to cure infertility problems
19	<i>Gardenia jasminoides</i> J.Ellis	Rubiaceae	Gandarajan	Intact flower put into water overnight. Filtered water used to treat Conjunctiva. use three drops thrice in a day
20	<i>Glycosmis pentaphylla</i>	Rutaceae	Narumpanal	Leaves boiled with



	(Retz)DC			water. medicated water used for bathing tender leaf extract used orally against viral fever
21	<i>Helicterus isora</i> L.	Sterculiaceae	<i>Edampirivalampiri</i>	Root used along with bark of <i>Lagerstromia flos-reginae</i> , <i>Malaxis rheedi</i> , <i>Zizphus rugosa</i> and <i>Malaxis rheedi</i> used to prepare the decoction, which is used against psoriasis
22	<i>Hemidesmus indicus</i> (L)Br.	Asclepiadaceae	<i>Nannari</i>	Root used as Blood purifier. Root decoction used along with milk root paste externally applied on wounds
23	<i>Holostema adakodiyam</i> Schult.	Asclepiadaceae	<i>Adakodiyam</i>	Root extract mixed with milk against gynac problems
24	<i>Hydnocarpus pentandra</i> Gaertn.	Flacourtiaceae	<i>Marootikaya</i>	Dried fruits and seed used for oil extraction the used to cure skin disease.
25	<i>Indigofera tinctoria</i> L.	Fabaceae	<i>Neelaamari</i>	Root along with <i>Ficus hispida</i> bark make a rice water which used against menstrual problems
26	<i>Jasminum malabaricum</i> Wight.	Oleaceae	<i>Kattumulla</i>	Leaf and stem boiled in water the medicated water used against Arthritis
27	<i>Lepidagathis cuspidatus</i> Nees.	Acanthaceae	<i>Paramullu</i>	Fresh plant sliced and boiled in water. The medicated water used as Anti inflammatory
28	<i>Murdania nudiflora</i> (L)Brenan.	Commelinaceae	<i>Paravellamkudiyam</i>	Intact plant dried and powdered, the powder mixes along with <i>Piper longum</i> and <i>piper nigrum</i> .

				the mixture make into a crude paste by using honey. The mixture effectively used against Asthma
29	<i>Oroxylum indicum</i> Benth ex Kurz.	Bignoniaceae	<i>Palakapayyani</i>	Muscular pain and diarrhoea
30	<i>Pajanelia longifolia</i> (Willd)Schum.	Bignoniaceae	<i>Payyani</i>	Tender leaf paste used against ringworm infection Foot disease
31	<i>Piper betel</i> L.	Piperaceae	<i>Panchurulivettilla</i>	Leaf paste applied externally t treat skin disease such as scabies
32	<i>Plumbago rosea</i> L.	Plumbaginaceae	<i>C hethikoduveli</i>	Processed root used for the preparation of decoction. The decoction mixes with milk or ghee take two times in a day to cure Ulcers
33	<i>Pterocarpus marsupim</i> Roxb.	Fabaceae	<i>Venga</i>	Bark or hard wood put into water up to overnight. the medicated water orally administered for three months to cure Diabetes
34	<i>Ruta graveolaens</i> L.	Rutaceae	<i>Arutha</i>	Along with leaves of <i>Alstonia scholaris</i> , <i>Tylophora asthmatica</i> , <i>Terminalia bellerica</i> fruit powder mix with coconut oil. medicated oil externally applied against psoriasis
A	<i>Smilax zeylanica</i> L.	Liliaceae	<i>Chennarovali</i>	Stem and leaf burnt ash applied externally on wounds
36	<i>Spondias pinnata</i> (l.f)Kurz.	Anacardiaceae	<i>Ambazham</i>	Tender leaf paste and fruit pulp mix with boiled water take twice in a day to cure gastric problems





37	<i>Stereospermum colais</i> Mabb.	Bignoniaceae	<i>Poopathiri</i>	Bark and root boiled in coconut oil. This medicated oil used against Backpain
38	<i>Strychnos potatorum</i> L.F.	Loganiaceae	<i>Thettamparal</i>	Bark extract mix with milk used against Gynac problems
39	<i>Tamarindus indica</i> L.	Caesalpiniaceae	Valanpuli	Tender leaves covered with cotton cloth make a small kits. The leaf kit dipped in boiled water . warmth the affected portion like joints to treat Arthritis
40	<i>Wattakaka volubilis</i> (L.f)Stapf.	Asclepiadaceae	<i>Vattakakakodi</i>	Stem and leaf extract filtered in cotton cloth and filtered extract applied on eyes to cure migrain
41	<i>Vitex negundu</i> L.	Verbenaceae	<i>Karinochi</i>	Leaf extract applied on affected areas spider attack
42	<i>Vitex altissima</i> L.f.	Verbenaceae	<i>Mayilellu</i>	Leaves crushed into paste this used externally to deep wounds and ringworm infection
43	<i>Wrightia tinctoria</i> R.Br.	Apocynaceae	<i>Dandapala</i>	Leaf soaked in coconut oil up to 7 days the oil become turned in to blue coloured, the medicated oil used against Skin disease

#### 4. Conclusion

Indigenous knowledge based traditional medicinal practices are commonly used to treat various ailments. Now a day's such practices are reduced due to modern culture and unawareness. Majority of people in developing countries are not having a sufficient knowledge regarding such

plants. In this context the documentation of traditional knowledge is highly remarkable. The present study has identified and recorded many medicinally important plants which are used by major tribal communities of Kasargod district of Kerala to cure many ailments. Traditional healers as well as local

inhabitants of the study area are used such plants for themselves and for others too.

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