



Ethnobotanical Information from *Mullukuruma* Tribes of Meppadi, Wayanad District, Kerala

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Abstract

Mullukuruma or *Kuruma* are Land-owning tribe found in Wayanad and adjoining areas of Gudalur Taluk in Nilgiri districts of Tamilnadu. The *Mullukuruma* tribe is a very prominent tribal group in Wayanad district of Kerala with unique cultural and ethnobotanical practices, like other traditional tribes, depends mainly on plants and their products for almost all of the requirements related to their food, shelter, social-cultural activities, and medicinal requirements. During the survey, 57 plant species were identified, which are being used by the tribal community of that area for primary healthcare and food, rituals and ceremony, and other uses.

1. Introduction

Ethnobotany is the scientific study of the traditional knowledge and customs of a people concerning plants and their uses. An ethnobotanist thus strives to document the local customs involving the practical uses of local Flora for many aspects of life, such as plants as medicines, foods, and clothing (Schultes, 1962). Richard Evans Schultes often referred to as the father of ethnobotany. Tribal and rural inhabitants possess an incredible knowledge of a number of plant-based formulations which served mankind for a long time. This knowledge is generated to millennia of experimentation, observations, and trial and error method. It is a system of knowledge in which humans are a part of nature as much as nature is a part of their being. Therefore, it is based on the principle of symbiotic relationship rather than exploitation of nature.

Besides, the traditional knowledge system needs to be studied, documented, preserved, and used for the benefit of mankind, before it is lost forever. Conservation on Biological Diversity (CBD) states that indigenous people play an important role in environmental management and development through their traditional practices. It requires nations to protect the traditional knowledge and customary practices related to use of the biological resource. This will recover a holistic approach, involvement, and participation of local inhabitants. Since local users often have a good understanding of how sustainable harvesting should be practiced strategies of benefit-sharing mechanisms for sustainable utilization of medicinal fruit plants in conformity with the provisions of CBD needs to be developed. Knowingly or unknowingly people have involved

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Strategies for doing so in the form of rituals beliefs and taboos.

In India studies in the field of ethnobotany have been done by different workers. Glimpses of Indian ethnobotany by Jain (1981) was the first book dealing with the Indian ethnobotany. Ethnobotanical studies in Kerala started during the middle of the 20th century.

According to 31 March 2011 census report total tribal population of India is about 8.6 % of the total population. In Kerala, it is 484839; out of this 4,33092 are in rural areas and 51,747 in urban areas. The highest number of scheduled tribes has been recorded in Wayanad (1,51443) and the lowest in Alappuzha (6,574). Tribals are distributed throughout Kerala. Tribals are known by different names in the country; *Vanavasi*, *Vanyajathi*, *Pahadi*, *Adivasi*, etc. but in the constituent for the respecting their group the name 'Scheduled Tribes' is used. Fifty-two tribal groups have been reported from Kerala³. Due to the peculiar pattern of their settlements and traditional occupation, they are concentrated in certain regions of the state. *Kurumas*, *Paniyas*, *Kattunaikas*, *Adiyas* and *Kurichyas* are the major tribes of Wayanad region of Kerala.

2. Methodology

2.1 Study Area

The study area is Meppadi Gramapanchayat at Vythiri Taluk of Wayanad district of Kerala. The area of Panchayat consists of Kottapadi, Vellarmala and Thrikaipetta revenue villages 1/3 of the area is full of small hills. Other parts are the valley and plains. According to the 2001 census of India, the total population of the panchayat was 39849. The scheduled

tribe population in Panchayaths is 3516.

The district of Wayanad tri-junctional area situated between the part of Kerala, Karnataka, and Tamil Nadu states and between the plateau and cost, intersected with Hills, forest and fertile Valley, is in the North-Eastern part of Kerala and covered over 2126 square kilometers. It has the highest concentration of tribes and marginal farmers in Kerala. Their lifestyles, cultures, custom, traditions, and religious practices are different from each other.

The topography of Wayanad is characterized by a series of hills and deep valleys, with occasional precipitation peaks of Grassland and exposed Granites. Wayanad lies between north latitude 11° 27 and 15°50 and East to 75° 47 and 70°47 Wayanad has a salubrious climate. The differences in altitude of each locality within the district present a variation in climatic conditions. As the district is situated in the tropical belt region. It has a tropical monsoon climate with three major varying seasons.

2.2 The tribe *Mullakuruma*

Mullakuruma or *Kuruma* is Land-owning tribe found in Wayanad and adjoining areas of Gudalur Taluk in the Nilgiri districts of Tamilnadu. The *Mullakuruma* tribe is a very prominent tribal group of the Wayanad district of Kerala with unique cultural and ethnobotanical practices, like other traditional tribes, depends mainly on plants and their products for almost all of the requirements related to their food, shelter, social-cultural activities and medicinal requirements. They are great naturalists. They use two types of tribal healing methods namely herbal and ritual. The herbal method



treats patients only using plant resources. They diagnose disease based on the symptoms as well as based on personal experience. In medicine, the plant parts are used raw or in the form of decoration and infusion when taken orally. They have stipulated specific dosages for each disease.

Plant part used by them is root, bark, leaves, fruits, and flowers to heal burns and infections of the skin. They make a paste by grinding specific parts of plants and applied to the skin internal users are predominant open external applications. Single plants or mixes of plants are used as medicine, the majority of medicinal preparation are simple drugs made from single plants. Often ingredients from several plants are used for an instant of cure of diseases. Generally, fresh part of plants is used for the preparations of medicine. When a fresh part is not available, dried what are also used. Traditional medicinal practices are an important part of the Primary healthcare system in the developing world (Thakur, 1986). Medico ethnobotany act as a bridge between tribal knowledge regarding medicinal aspects of plants and modern medicine. The knowledge about medicinal plants is transferred among the tribals orally to generations. *Mullakuruma* tribe is used many plant species for food, ceremonies, medicine, and making types of equipment and weapons. etc.

The study was completed in three phases:

2.3 Methodology evolution phase

In this phase, preliminary activities like visited to study sites, information about ethnic communities, knowledgeable Informant's

identification work plan, Data Collection procedures, and literature survey were completed. Rapport was built with the key informants after repeated visits to their dwelling

2.4 Field survey stage

The field survey was conducted from April to May 2019. Semi-structured interviews were done repeatedly with each and every informant. Transect walks were made into forest areas with the permission of the forest officers and plants specimens and habitats were surveyed thoroughly. Local names, methods of identification used by informants, and conservation strategies regarding each and every specimen were recorded. Every word from the Interviews was recorded using the digital voice recorder and saved on the computer. Original specimens of plants used by these informants were collected and made into a herbarium sheet as per international standard procedures.

2.5 Analysis of data

The recorded data were analyzed for information and were converted into written form in printed books. Different quantitative and qualitative Indices were analyzed in the recorded data. A detailed report was written and submitted.

3. Results and Discussion

The present study mainly focused to document ethnobotanical knowledge of tribe *Mullakuruma* where residing in the Meppadi Gramapanchayat at Vythiri Taluk of Wayanad district of Kerala. During the survey, there are about 57 plant species were identified and documented and these plants are being used by the tribal community in the selected study area for primary healthcare and food, rituals and



ceremony and other uses. The morphology of useful parts of these plants includes leaves, rhizomes, stems, bark, flower, fruit, seed, latex, etc. for different purposes. The present analysis also noted that, out of 57 plants, 36 plants were used for medicinal purposes, 9 plants used as food, 2 plants for ritual, 1 for the ceremony, and 9 plants for other use (Table-1 & Fig.1).

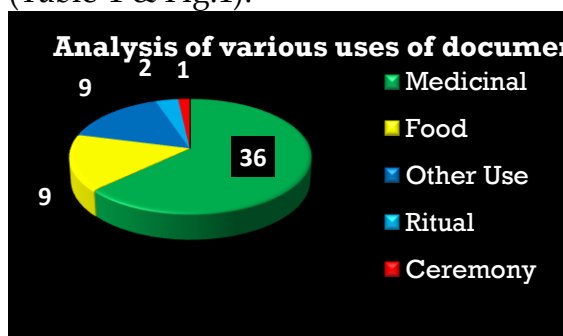


Fig. 1 Analysis of various uses of ethnobotanical plants in the study area

The intimate relationship between plants, animals, and humans from the remote past has evolved along the parallel line of cooperation and dependence on each other. Plants which are the main part of the natural environment are the basis of life on the earth they not only yield a range of essential products but also provide mental and spiritual comfort to people all around the world. They have always been, and always will be, central to people's livelihood. The Mullakuruma tribe under the study has acquired unique knowledge about

the use of wild flora and fauna. Most of which are not known to the outside world by living close to nature. The *Mullakuruma* tribe under the study has its own special lifestyle, medicinal practices, culture, customs, and traditional and religious practices. During the survey, 57 plant species were identified. which are being used by the tribal community of that area for primary healthcare and food, rituals and ceremony, and other uses. The present observation also noted, there are about different parts of plants like leaves, rhizomes, stems, bark, flower, fruit, seed, latex, etc. are being used by *Mullakuruma* tribe for different purposes. About 36 plants for medicinal use, 9 plants used as food, 2 plants for ritual, one for the ceremony, and 9 plants for other use.

Now a day's large numbers of medicinal plants are being threatened due to deforestation and urbanization. In these circumstances, ethnobotanical and ethnomedicinal studies have great significance in the collection of traditional knowledge. Due to a lack of interest among the younger generation as well as their affinity to migrate to the city for profitable jobs, there is a possibility of losing this wealth of knowledge in the near future. It thus becomes necessary to acquire and preserve these traditional systems of medicine through proper documentation and identification.



Table-1: List of ethnomedicinal plants used by Mullakuruma tribes of Meppadi, Wayanad District, Kerala

Sl No	Botanical Name	Local name	Family	Uses	Method of use
1.	<i>Ageratum conyzoides</i> L.	Appa	Asteraceae	Used for wounds	The leaves were cleaned and ground and the extract is applied on the affected part for healing wounds.
2.	<i>Alternanthera sessilis</i> (L.) R. Br. ex. DC.	Ponamkanni	Amaranthaceae	used for food	Leaves are used as vegetables.
3.	<i>Amaranthus spinosus</i> L.	Mullencheera	Amaranthaceae	Food	Leaves are used as a vegetable
4.	<i>Artemisia nilagarica</i> (Clarke) Pamp.	Karpoorachedi	Asteraceae	Used as a local pesticide.	Leaves are put in poultry cages to repel the chicken lice. Leaves are rubbed on the legs and arms to prevent leech infestation while walking to the forest.
5.	<i>Ayapana triplinervius</i> (Vahl) R.M. King & H. Rob.	Ayyambana	Asteraceae	Medicine of piles	The leaves ground and made small balls. which is swallowed with cow milk two times a day.
6.	<i>Bambusa arundinacea</i> (Retz.) Willd.	Mula	poaceae	Food, Wood used by household carpentry, furniture, boxes, ornamental vases, scaffolding, hunting equipment etc.	Young shoots pickled or made into curries
7.	<i>Biophytum reinwardtii</i> (Zucc.) Klotzsch	Mukkutti	Oxalidaceae	Medicine for Toothache	Biting leaves boiled in coconut oil with affected teeth and the boiled leaves taken on cotton cloth and tied around the wrist help to cure toothache.
8.	<i>Boerhavia diffusa</i> L.	Thazhuthamma	Nyctaginaceae	Medicine for jaundice.	leaf extract is used in internally in the treatment once a day for one or two weeks.



9.	<i>Caryota urens</i> L.	Pana	Aracaceae	Making of appam. Used to make the floor of the cowshed. Build a special pavallion for the elders of the colony.	The inner part of the matured stem is ground extract the starch which is used to make appam. Wood is cut into even pieces and used as a flooring for the cowshed. Leaves are cut and used to build a special pavallion for ender members of the colony during marriage ceremonies
10.	<i>Centella asiatica</i> (L.) Urban	Kodangal	Apiaceae	Food and medicine for toothache	Young leaves are used as vegetables. Leaf paste is applied on the cheek and chucked well.
11.	<i>Chromolaena odorata</i> (L.) King & Robins.	Communist Pacha	Asterareae	Used for wounds	The leaves were cleaned and ground and the extract are applied to the affected part for healing wounds
12.	<i>Colcasia esculenta</i> (L.) Shott.	Thalu	Araceae	Food.	The stem is used as food; the stem is cut into small pieces and cooked.
13.	<i>Cucurbita pepo</i> L.	Mathan	Cucurbitaceae	Food	Leaves are used as vegetable
14.	<i>Curcuma longa</i> L.	Manjal	Zingiberaceae	Small insect bite, skin softening, wounds.	The paste of rhizome is taken externally for wounds and insect bites. Directly applied on the whole body to make skin soft.
15.	<i>Cycleapeltata</i> (Lam.) Hook. f. & Thoms.	Padathali	Menisperma ceae	Dandruff.	The leaves were crushed well and made into a fine paste and smeared on the head; after some time wash with fresh water in three times for a week.
16.	<i>Dioscorea alata</i> L.	Kaachil	Dioscoraceae	food	Tuber is used as vegetable
17.	<i>Eclipta prostrata</i> (L.) L.	Kayyunni	Asteraceae	Hair oil	leaf extract is boiled with coconut oil or gingelly oil and applied on hair before bath, it promotes hair growth
18.	<i>Erythrina subumbrans</i> (Hassk.) Merr.	Murik	Fabaceae	Used as food	The young leaves are used for food.
19.	<i>Euphorbia hirta</i> L.	Kuzhinagapala	Euphorbiaceae	Medicine of scabies	The entire plant was dried, fried till it become black then powdered mixed in coconut oil, and applied once times in a day for a week.



20.	<i>Ficus racemosa</i> L.	Athimaram	Moraceae	Making hunting equipment.	Plant latex is used to make the hunting equipment for birds. Collecting latex from plants and mix with latex of <i>Artocarpus hirsutus</i> or <i>A. heterophyllus</i> , very high adhesive properties. Then it is pasted on the one end of the small pieces of the bamboos this is known as velangikolu. Small birds are adhesive to velangikolu.
21.	<i>Garcinia gummi-gutta</i> (L.) Robs.	Kudampuli	Clusiaceae	Medicine for tonsillitis and cholesterol	The ripened fruit is eaten as a whole to cure tonsillitis. The water in which dried fruits are soaked overnight is consumed in the early morning to control blood cholesterol levels.
22.	<i>Gliricidia sepium</i> (Jacq.) Kunthex Walp	Cheemakon na	Fabaceae	Used as local pesticide.	Green leaves are burned for repelling the mosquitos in the evening.
23.	<i>Glycosmis pentaphylla</i> (Retz.) DC	Panal	Rutaceae	Medicine for karappan and itching.	A paste made with leaves and rhizome of turmeric is applied on the whole body once a day for two days to cure itching and karappan.
24.	<i>Grewia serrulata</i> DC.	Manali	Tiliaceae	Making bowstring and broom rope	The bark of the young stem is moderately dried in the sunlight and twisted together to make browsing and broom rope.
25.	<i>Helicteres isora</i> L	Idampirival ampiri	Sterculaceae	Medicine of dysentery and cough.	Dried fruit powder with fruit powder of <i>Phyllanthus emblica</i> is internally twice a day.
26.	<i>Hemigraphis larata</i> (Burm.f.) T. Anderson	Murikootti	Acanthaceae	Healing wounds	The leaves were cleaned and the extract is applied to the affected part
27.	<i>Hibiscus rosa-sinensis</i> L	Chembarat hi	Malvaceae	dandruff and hair growth.	The leaves were crushed well and made into a fine paste and smeared on the head after some time washed with fresh water. Flower and coconut oil bare oiled and use daily before bathing.it promotes hair growth



28.	<i>Jatropha curcus</i> L.	Kadalavana ku,aamal	Euphorbiaceae	Medicine of wort and mouth ulcer.	Latex mixed with lime is applied on the affected portion every day to remove skin wort. The latex in a small amount is applied on the affected part of the mouth every day for mouth ulcers.
29.	<i>Justicia adhatoda</i> L.	Aadalodakam	Acanthaceae	Medicine for cough	powder of dried leaves taken internally with sugar or Vellam Two times a day and leaf extract is also used.
30.	<i>Justicia gendarussa</i> Burm. f.	Vathamkoll i	Acanthaceae	Medicine for rheumatoid arthritis	The water boiled with leaves is used to bath.
31.	<i>Lantana camara</i> L.	Chullipoovu	Verbenaceae	Medicine for Itching.	Leaf extract boiled in coconut milk directly on the affected part once a day for a week.
32.	<i>Leucas aspera</i> (Willd.) Link	Thumba	Lamiaceae	Medicine for cold and itching.	The whole plant is boiled and nebulized for cold two times in a day. Leaves are ground with rhizome of turmeric. which is taken externally and applied on the affected part twice a day for three days to cure itching.
33.	<i>Mangifera indica</i> L.	Maavu	Anacardiaceae	Preparation of kurukumpuli is used as medicine for throat infection and also as puli in curries.	The mature fruit extract is boiled for dehydration and itcolor change to black from yellow. This liquid is known as kurukumpuli. It is used as puli taste in food items. Kurukumpuli is taken internally as medicine for throat infections.
34.	<i>Maranta arundinacea</i> L.	Koova	Marantaceae	Medicine for urinary diseases.	Powder of rhizome is mixed with water and drank once a day for one or three weeks.
35.	<i>Moringa pterygosperma</i> Gaertn.	Muringa	Morigaceae	Medicine for bruises and scar.	Leaf and bark ground and applied on affected part once a day for a week cure to bruise. Leaves paste is taken externally to the affected part once a day for 1 or 2 weeks to remove the scar.



36.	<i>Murraya koenigii</i> (L.) Spreng	Kariveppila	Rutaceae	Medicine of dandruff and hair oil preparation.	preparation of hair oil, and leaves boiled with coconut oil. Oil is daily used before the bath it helps to promote hair growth. Leaf extract is applied on the head once a day for 1 or 2 weeks before bath, to cure dandruff
37.	<i>Ocimum tenuiflorum</i> L.	Thulasi	Lamiaceae	medicine for fever, cough, and cold	Leaf extract is taken orally in two times a day for a week to cure fever. The leaves are boiled in water and the steam is inhaled for cold cough and fever once a day for 3 or 4 days.
38.	<i>Pennisetum hohenackeri</i> Hochst	Maanipullu	poaceae	Making of broom.	The whole plant is collected and dried in the sunlight for one or two weeks. The dried plant is cut into the proper size and shape and made into the broom using natural fiber of plants such as <i>Grewia serrulata</i> DC.
39.	<i>Persea macrantha</i> (Nees) Kosterm.	Kulirmaavu	Lauraceae	Used as adhesive material for the paint to use a painting of wall.	The bark is ground with water and filtered properly. which is mixed with coloring material to paint the wall, this helps to proper adhesion of paint into the wall
40.	<i>Phyllanthus amarus</i> Schum & Thonn.	Kizharnelli	Euphorbiaceae	Jaundice, dandruff.	The whole plant is roasted, powdered, and boiled in water, the residue is collected after removing the supernatant, and the residue is mixed with milk. The mixture is taken internally twice a day. Leaf juice is applied on the head and massaged before bath, it helps to cure dandruff.
41.	<i>Piper betle</i> L.	Vettila	Piperaceae	Ritual of marriage ceremony.	" <i>Vettilakodukal</i> " is the main ritual of the mullakuruma marriage ceremony. The groom or bride gave the betel leaf and piece of areca nut to elder people in the evening of yesterday, the blessed to groom or bride.



42.	<i>Plectranthus amboinicus</i> (Lour.) Spreng	Panikoorka	Lamiaceae	Fever, cough, headache	Leaves were crushed well and the extract is taken with honey once a day for a week as a treatment for fever. Leaf juice is taken internally once a day for a week as medicine for cough, cold etc.
43.	<i>Psidium guajava</i> L.	Peraka	Myrtaceae	Medicine for diarrhea and sugar.	Young leaf juice mixed with curd is used once a day for diarrhea. Tender leaves boiled with water and drank daily cure to blood sugar.
44.	<i>Ricinus communis</i> L.	Avanaku,amal	Euphorbiaceae	Used as rituals of the funeral.	The leaves are used to keep the hair or beard of relatives during pula (ritual).
45.	<i>Ruta graveolens</i> L.	Arootha	Rutaceae	Medicine of cough, good sleep, epilepsy.	Leaves boiled with coconut oil made an oil. Its taken externally whole body of children before bath cure to cough. The leaves along with seeds of <i>Ricinus communis</i> L. are made into decoction It is taken externally, and mixture is applied on the face the extract is applied on hand and tied gently.
46.	<i>Santalum album</i> L.	Chandanam	Santalaceae	Medicine of pimples	Stem paste is mixed with rhizome paste of turmeric and is applied on the face once a day for a week.
47.	<i>Schleichera oleosa</i> (Lour.) Oken	Poothan	Sapindaceae	Medicine of itching and scabies.	Seed oil is taken from the dried seed. This oil is applied to the affected part once a day for a week
48.	<i>Scoparia dulcis</i> L.	Kalluruki	Scrophulariaceae	Medicine for kidney stones and urinary disease.	The extract is taken internally in two times a day for 1 or 2 weeks.
49.	<i>Senna tora</i> (L.) Roxb.	Thakara	Fabaceae	Used as food.	Tender leaves are used as a food
50.	<i>Sida acuta</i> Burm. f.	Anakuruthotti, Alutha	Malvaceae	Used as making of the broom.	Matured whole plant collected and dried in the sunlight for one or two weeks. The dried plant is cut into the proper size and shape and make the broom uses natural fiber of plants such as <i>Grewia serrulata</i> DC.
51.	<i>Solanum americanum</i> Mill.	Mudinja	Solanaceae	food	leaves used as a vegetable



52.	<i>Solanum melongena</i> L.	Vazhuthana	Solanaceae	Medicine of burn	Leaf extract is applied on the affected part once a day to continue to cure the burn.
53.	<i>Solanum violaceum</i> Ortega	Putharichunda	Solanaceae	Used as food	Mature fruit cooked with water and add ingredients such as chilly, garlic, salt, cumin, etc. Then the mixture is made into small balls and dried under sunlight. dried balls fried in coconut oil and use as side dish.
54.	<i>Tamarindus indica</i> L.	Puli	Fabaceae	For bath	The water boiled with the leaves is used to bath for healthy skin.
55.	<i>Vanda testacea</i> (Lindl.) Rchb.f.	Maravazha	Orchidaceae	Used for Ear pain.	The fresh leaves were collected and heated well, crushed with hand and the juice is poured into the eardrop by drop 2 times per day.
56.	<i>Vitex negundo</i> L.	Karinechi	Verbanaceae	Medicine of ulcer	Leaf paste is taken orally twice a day for a week
57.	<i>Ziziphus rugosa</i> Lam.	Kottamulu	Rhamnaceae	Used for the funeral.	Three pieces of a twig of the plant are put on the sepulcher in a particular arrangement such as one piece of twig on the head side of the dead body and one piece on the middle, last one on the leg side.



4. Conclusion

The present study on *Mullakuruma* tribe in Meppadi of Wayanad district of Kerala reveals that, there are about 57 plants were used by the selected tribal community for various purposes. These plants are the integral part of their daily life. They directly depends such plants for their health care aspects, nutritional requirements and other miscellaneous purposes. Hence the documentation of such valuable plants are highly essential for their proper care and conservation for future generation.

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