



## Research Article

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### EXPLORATION OF MEDICINAL PLANTS USED BY THE MALAYALI TRIBES OF KOLLI HILLS, TAMILNADU, INDIA

A. Anjalam<sup>1</sup>, R. Elangomathavan<sup>2</sup> and S. Premalatha<sup>1\*</sup>

<sup>1</sup>PG and Research Department of Botany, A.A Government Arts College, Musiri, Tamil Nadu, India

<sup>2</sup>Department of Biotechnology, PRIST University, Thanjavur, Tamil Nadu, India

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#### \*Corresponding author

Dr. S. Premalatha, Assistant Professor, PG & Research Department of Botany, Argnar Anna Government Arts College, Musiri-621 211, Tiruchirappalli District, Tamil Nadu, India E-mail: spr\_latha@yahoo.co.in

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#### ABSTRACT

An Ethno botanical survey was carried out among the ethnic groups in the Kolli hills, Tamil Nadu, India. Kolli Hills or Kolli Malai is a small mountain range located in central Tamil Nadu in Namakkal district of India. The mountains are about 1000 to 1300 m in height and cover an area of approximately 280 km<sup>2</sup>. The present study revealed that the medicinal plants are used to cure skin diseases, stomach problems, diabetes, urinary infections, fever, cough, cold, snakebites, ear ache, hair growth, headache, indigestion, itches, swellings, wounds and dental problems. Traditional medicinal uses of 60 plants species belonging to the various families were described in this study. The medicinal plant resources in Kolli hills continue to play a vital role in healthcare needs of malayali tribal community. The traditional knowledge of local tribal people on medicinal plants was collected through questionnaires and personal interview of local traditional practitioners during field trips. The elder generation has sound knowledge about medicinal plants. The collection and documentation of their practical knowledge and traditional techniques based on the traditional use of plants is a significant step towards the preservation of the valuable knowledge by keeping in view the fading ethnic traditions and cultures. From this study it is obvious that more attention need to be paid to understand and prove the efficacy of traditional knowledge on medicinal plants using advanced scientific tools.

**Keyword:** Ethno botany, Ethno medicine, Kolli hills, antidotes, skin diseases

#### INTRODUCTION

The value of medicinal plants to the mankind is well proven. It is estimated that 70 % to 80 % of the people worldwide rely chiefly on traditional health care system and largely on herbal medicines<sup>1</sup>. India harbours about 15 percent (3000 - 3500) medicinal plants, out of 20000 medicinal plants of the world. About 90 percent of these are found growing wild in different climatic regions of the country<sup>2</sup>. South Indian tribes are blessed with rich biological diversity of plants and a high degree of traditional knowledge about medicinal plants and their uses for various ailments of human being. The Kolli hill of Eastern Ghats lies in Tamil Nadu, India, is well known for its rich biological diversity of plants particularly of medicinal and aromatic plants. It is also the traditional hill country, the friendly land of malayali tribes and a part of the erstwhile kingdom of Valvil Ori and having a total geographical area of 28,293 ha. Presently, the area is approximately 51 % agricultural land, and 44 % forestland<sup>3-4</sup>. The hill supports approximately 37,000 inhabitants living in 274 hamlets. The population is primarily malayali, a cultural group that has been assigned Scheduled Tribe designation by the Government of India. The resident malayalis (literally meaning people of the hills) are a friendly, sturdy and hardworking people, who generally keep to themselves. They constitute about 95 % of the total population of these sparsely populated hills. The malayali tribal people largely live in Solakkadu, Semmedu, Keel Solakadu, Valavanthinadu, and Othakadai hamlets which a situated at the top of the Kolli hill<sup>5</sup>. About 7800 tribal

families in the Kolli hill depend on forest for their food, fodder, herbal medicines, fire wood and timber resources. Each tribe/sub-tribe has distinctive cultures, customs, traditional beliefs and language of their own. These differences have contributed to the high diversity of indigenous traditional knowledge and practices of medicinal plants in traditional health care management. India has an officially recorded list of 45,000 plant species and various estimations have put the list of 7500 species of medicinal importance<sup>6</sup>. During the last few decades there has been an increasing interest in the study of medicinal plants and their traditional uses in different parts of the world<sup>7-11</sup>. Documenting the indigenous knowledge is important for the conservation and utilization of biological resources. In this way, the studies on the tribal's indigenous knowledge about various plants and their values constitute an important and preliminary aspect on medicinal plants and their usages. Traditional knowledge systems of various medicinal plants' utilization appear to vary according to local population domain. Documentation of these local knowledge system concerning medicinal plants may have high impacts from a bio-economic point of view. Ethno botany tries to study the relationship between the human being and the nature. Traditionally, this treasure of knowledge has been passed on orally from generation to generation without any written document<sup>12-13</sup> and is still retained by various indigenous groups of people around the world. The objective of the present study was to document the knowledge of ethno medicinal plants species used by the tribal communities.

## MATERIALS AND METHODS

### Study Area

Kolli hill is situated at an ever-so-pleasant altitude ranging from 1000 to 1300 m above mean sea level in the Namakkal district of Tamil Nadu state, South India (Figure 1.). Some part of the eastern portion of the hill lies in the Perambalur district. Kolli hill (Kollimalai in Tamil) has an area of 282.92 sq. km 16. It stretches 29 km from north to south and 19 km from east to west. Kolli hill is a part of the Talaghat stretch and eastward of the hill lies in Pachamalai. Kolli hill and Pachamalai are divided by a broad valley. Kolli hill on the western, eastern and southern sides rises abruptly from the plains and on the northern side ascends to the plain by numerous long and gently sloping spurs. Kolli hill is also called Sathuragiri or Square hill. But the hill contains high rising peaks and ravines. Kolli hill enjoys a salubrious climate throughout the year. This is fertile pocket in Namakkal district where exotic tropical fruits and medicinal plants grow in plenty. Annual rainfall is 1324 mm. which is received largely between May and December<sup>17</sup>. Annual mean temperatures of maximum and minimum are 35 °C and 18 C respectively<sup>18</sup>. The type of soil is red loamy and black soil. In order to collect the information about the various medicinal plants available in Kolli hill with regard to their common and local names, part(s) used related ailments and many old people, vaidyas and medicine men and women of study area were interviewed. Subsequently, the information gathered were confirmed with suitable literatures identification of plants, their medicinal usages, preparation of drugs from a particular plant or plant part(s), and its corresponding disease(s) or ailments. The collected Plants specimens were identified by Dr. S. John Britto, Director, The Rapinat Herbarium and Centre for Molecular Sytematics, St' Joseph's College, Tiruchirapalli, Tamil Nadu, India and The Voucher specimen was deposited in Department of Botany, Arignar Anna Government Arts College, Musiri, Tamil Nadu, India. Some plants specimens, identified with the help of suitable literatures namely Flora of the Presidency of Madras, and Herbaria of Botanical Survey of India

(BSI), Southern circle, Coimbatore, South India. The voucher specimens of each species have been deposited at the Department of Botany, Arignar Anna Government Arts College, Musiri, Tirunelveli, Tamil Nadu, India.

## RESULTS AND DISCUSSION

In the present study the medicinal plants were collected from Malayalis tribes from kolli hills in Namakal district, Tamil Nadu, India. A total of 60 medicinal plant species used by Malayali tribes in their day-to-day life to cure various diseases have been documented (Table 1). Most of the plants were collected from the wild habitat. The aim of this ethno medical survey and documentations was to catalogue the plants traditionally used by the malayali tribal of Kolli hill against various diseases of human being. The results of this study showed that the large number of medicinal plants are traditionally used by the tribal community of Kolli hill for the treatment of various diseases or health disorders of man. Sixty medicinal plant species were recorded and arranged based on their vernacular names (Tamil), botanical names, followed by family, part(s) used and mode of preparation of medicines have been given in table form (Table 1). There is public believe that modern drugs are dangerous foreign chemicals with side effects, while herbals are natural and safe. In fact, some herbs can also be dangerous and even cause serious diseases leading to death, if used inappropriately. The complexity of herbal drug preparations and the interpretation of bibliographic data on their safety and efficacy reflecting experience gathered during long-term use are best addressed by involving specific expertise and experience. Traditional healers have tremendous knowledge on the use of plants as medicine. *Cyanodon dactylon* used to cure cancer, diabetes, *Withania somnifera* is an excellent remedy for nervous disorder, *Hibiscus raso-sinensis* flower are used to cure heart diseases. The powder of the flower is used for the control of blood glucose level. *Azadiracta indica*, *Achyranthes aspera*, *Madhuca longifolia* are used to treat skin diseases.

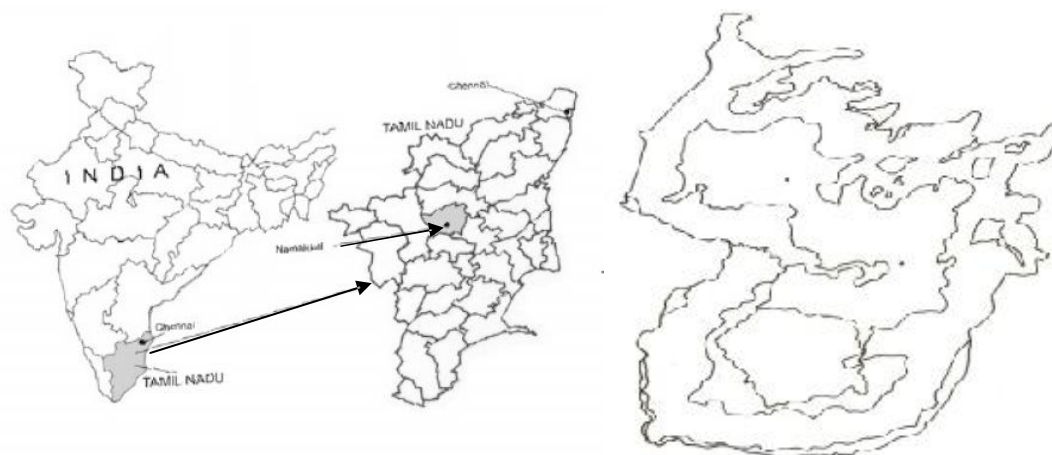


Figure 1: Location map of Namakkal district and Kolli Hills in Tamil Nadu

Kolli Hills

Table 1: Ethno medicinal plants, mode of preparation and uses in malayali Tribes of Kolli hills in India

Vernacular Name	Botanical Name	Family	Parts Used, Mode of Preparation and Medicinal Uses
Arugambul	<i>Cynodon dactylon</i>	Graminaceae	Juice of entire plant used cure cancer
Periyanangai	<i>Polygala elongata</i>	Polygalaceae	Leaves decoction used for poisonous bite
Sriyanangai	<i>Andrographis paniculata</i>	Acanthaceae	Leaves decoction used for poisonous bite
Vishnu granthi	<i>Evolvulus alsinoides</i>	Convolvulaceae	Juice of entire plant used for fever
Amukkara	<i>Withania somnifera</i>	Solanaceae	Root decoction treatment for nervous disorder
Sembaruthi	<i>Hibiscus rosa-sinensis</i>	Malvaceae	Juice of flower petals cure the heart diseases
Keezanelli	<i>Phyllanthus niruri</i>	Euphorbiaceae	Entire plant juice cure the Jaundice
Vembu	<i>Azadiracta indica</i>	Meliaceae	Leaf paste for skin diseases
Vizalal pam	<i>Feronia elephantum</i>	Rutaceae	Fruits juice for depression
Vasambu	<i>Acorus calamus</i>	Aroidaceae	Rhizome used to treat indigestion
Nayuruvi	<i>Achyranthus aspera</i>	Amaranthaceae	Leaf paste for skin diseases
Makilam	<i>Mimusops elengi</i>	Sapotaceae	Fruits juice for files
Thumbai	<i>Leucas aspera</i>	Lamiaceae	Leaves juice for cough and cold
That boot kai	<i>Passiflora edulis</i>	Passifloraceae	Leaves for fever
Vallarai	<i>Centella asiatica</i>	Apiaceae	Leaves juice for memory stimulant
Katralai	<i>Aloe vera</i>	Liliaceae	Leaves pulp used as piles
Mudakkatran	<i>Cardiospermum helicacabum</i>	Sapindaceae	Leaf paste Rheumatism
Nagathali	<i>Opuntia dillenii</i>	Cactaceae	Leaves for poisonous bite
Vasaka	<i>Adhatoda vasika</i>	Acanthaceae	Leaf powder for Respiratory diseases
Serankottai	<i>Semecarpus anacardium</i>	Anacardiaceae	Fruit used to treat indigestion
Kattukkarunai	<i>Tacca pinnatifida</i>	Taccaceae	Rhizome Lakium for piles
Kunkulium	<i>Shorea robusta</i>	Dipterocarpaceae	Latex smoke for Respiratory diseases
Naval	<i>Eugenia jambolina</i>	Myrtaceae	Seeds powder for diabetes
Milagu	<i>Piper nigrum</i>	Piperaceae	Seeds powder for digestion
Elavangam	<i>Eugenia caryophyllata</i>	Myrtaceae	Flower bud powder diabetes
Alam	<i>Elletaria cardamomum</i>	Zingiberaceae	Seeds powder intestinal sore
Nagamalli	<i>Rhinacanthus communis</i>	Acanthaceae	Leaves juice, Seeds powder used for skin diseases
Marul	<i>Sansevieria roxburghiana</i>	Liliaceae	Leaves juice ear ache
Vettukayapoond	<i>Tridax procumbens</i>	Astraceae	Leaves juice for cuts and wounds
Parpadagam	<i>Mollugo phenanthylla</i>	Aizoaceae	Leaves juice for body cooling effect
Uttamani	<i>Pergularia daemia</i>	Asclepiadaceae	Leaves juice for fever and Asthma
Paeimiratti	<i>Anisomeles malabarica</i>	Lamiaceae	Stem paste for wounds
Aavarai	<i>Cassia auriculata</i>	Caesalpinaceae	Flowers decoction with goat milk cure the white discharge in women
Pirandai	<i>Cissua quadrangularis</i>	Vitaceae	Stem paste Dog bite's
Unnichedi	<i>Lantana camera</i>	Verbinaceae	Leaves decoction for stomach ache
Karuumathai	<i>Datura metal</i>	Solanaceae	Leaves paste for eye diseases
Palperuki	<i>Euphorbia cyathophora</i>	Euphorbiaceae	Leaves juice for lactation in woman
Nannari chedi	<i>Hemidesmus indicus</i>	Asclepiadaceae	Whole plant infusion to reduce body heat
Sodukku thakkali	<i>Physalis minima</i>	Solanaceae	Boiled fruits paste for kidney problems
Nerunchimul	<i>Tribulus terrestris</i>	Zygophyllaceae	Root decoction for urinary troubles
Notchi	<i>Vitex negundo</i>	Verbinaceae	Leaves vapour for headache and fever
Pappali	<i>Carica papaya</i>	Cariaceae	Stem latex for scorpion sting bit's
Thagarai	<i>Cassia tora</i>	Caesalpinaceae	Leaves, Seeds paste for skin diseases
Nithya kalyani	<i>Catharanthus roseus</i>	Apocynaceae	Whole plant juice for cancer
Puliyarai	<i>Drymaria cordata</i>	Caryophyllaceae	Leaves paste headache
Vadanarayan	<i>Delonix elata</i>	Caesalpinaceae	Young twig juice for common cold
Ellupai	<i>Madhuca longifolia</i>	Sapotaceae	Leaves paste for skin diseases
Valaimaram	<i>Musa paradisiaca</i>	Musaceae	Bark juice for kidney problems
Poonaikali	<i>Mucuna pruriens</i>	Fabaceae	Leaves powder for urinary diseases
Aattukal kizhangu	<i>Drymaria quercifolia</i>	Polypodiaceae	Rhizome paste for body pain
Perumarunthu	<i>Aristolochia indica</i>	Aristolochiaceae	Leaves juice for snake bite
Padar mookirattai	<i>Boerhavia diffusa</i>	Nyctaginaceae	Root decoction for Asthma
Mookirattai	<i>Boerhavia erecta</i>	Nyctaginaceae	Plant powder smoke for Asthma
Kumattikkai	<i>Citrullus colocynthis</i>	Cucurbitaceae	Root decoction for Jaundice
Thengaipochedi	<i>Commelina benghalensis</i>	Commelinaceae	Whole plant paste for Leprosy
Vellarugu	<i>Enicostemma axillare</i>	Gentianaceae	Root juice for snake bite
Vilvam	<i>Aegle marmelos</i>	Rutaceae	Leaves decoction for diabetes
Andhimalli	<i>Mirabilis jalapa</i>	Nyctaginaceae	Seeds infusion for hair tonic
Akathi	<i>Sesbania grandiflora</i>	Fabaceae	Flowers infusion for ulcer
Thoothuvalai	<i>Solanum trilobatum</i>	Solanaceae	Leaves paste for common cold

The reported species were belonging to 42 families, and 60 species with a highest of four species from Solanaceae and followed by three species from Caesalpinaceae, Nyctaginaceae, Acanthaceae and each two species from Euphorbiaceae, Rutaceae, Sapotaceae, Lamiaceae, Liliaceae, Myrtaceae, Asclepiadaceae, Verbenaceae,

Fabaceae and one species each from Poaceae, Polygalaceae, Convolvulaceae, Malvaceae, Meliaceae, Aroidaceae, Amaranthaceae, Passifloraceae, Apiaceae, Sapindaceae, Cactaceae, Anacardiaceae, Taccaceae, Dipterocarpaceae, Piperaceae, Zingiberaceae, Astraceae, Aizoaceae, Vitaceae, Zygophyllaceae, Cariaceae,

Apocyanaceae, Caryophyllaceae, Musaceae, Polypodiaceae, Aristolochiaceae, Cucurbitaceae, Commelinaceae, Gentianeae. The given table shows a documentation of plant species collected from the study areas based on the traditional reputation for their uses as medicines. Seven informants who had many years of experience in the use of traditional medicines were interviewed about the plants used for the treatment of various diseases. The mode of preparation was mostly a decoction or a water infusion usually prepared just before use. The plant materials were used in fresh form or in dried form and most plants used for remedy were stored in the dry state for later use, which allowed their utilization throughout the year.

### CONCLUSION

Important medicinal plants need immediate conservation in order to avoid degradation and the deforestation of sacred groves. Their cultivation and establishment should be encouraged to prevent the extinction of potentially valuable species. Additionally, local village people may benefit from having easily accessible low-cost herbal species close at hand.

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