

ETHNOBOTANICAL STUDY OF MEDICINAL PLANTS USED BY MALAYALI TRIBALS IN KOLLIHILLS OF TAMILNADU, INDIA

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ABSTRACT

An ethnobotanical survey was carried out among the Malayali tribals in various villages of Kollihills, Nammakkal District, Tamilnadu, India during January 2007 to April 2009. A total of 108 species of ethnomedicinal plants belonging to 102 genera and 59 families were reported with the help of standardized questionnaires among 50 tribal informants between the ages of 20-85. The study shows a high degree of ethnobotanical novelty and the use of plants among the Malayali reflects the revival of interest in traditional folk medicine. The medicinal plants used by Malayali are arranged alphabetically followed by botanical name, family name, local name, parts used, mode of preparation and medicinal uses.

KEYWORDS: Ethnomedicine, Kollihills, Namakkal district, Malayali tribals

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INTRODUCTION

Plants are the basis of life on earth and are central to people's livelihoods. Tribal people are the ecosystem people who live in harmony with the nature and maintain a close link between man and environment. Indian subcontinent is being inhabited by over 53.8 million tribal people in 5000 forest dominated villages of tribal community and comprising 15% of the total geographical area of Indian landmasses, representing one of the greatest emporia of ethno-botanical wealth¹.

Traditional medical practices are an important part of the primary health care system in the developing world². Herbal medicines are comparatively safer than synthetic drugs. Plant –based traditional knowledge has become a recognized tool in search for new sources of drugs and nutraceuticals³. The ethnobotanical survey can bring out many different clues for the development of drugs to treat human diseases. Herbal medicines are assumed to be of great importance in the primary healthcare of individuals and communities in many developing countries⁴. Considering the current rate of deforestation with the concurrent loss of biodiversity, there is a need for accurate documentation of the knowledge and experience of the traditional herbalists⁵. In this paper, we report on the information gathered from Malayali tribals

on the plants used for treatment of various diseases in Kollihills of Tamil Nadu, India.

STUDY AREA

Tamilnadu is situated in Southern end of India, east of Kerala and south of Andhra Pradesh and Karnataka states. The area of investigation (**Fig.1**) Kollihills is located in Nammakkal district, Tamil Nadu and has an area of 418.5 km latitudinal and longitudinal range of Kollihills are 11°10' - 11°30' N latitude 75°10' - 75°30' E longitude respectively. The hill is bounded by Namakkal in the South and South West. Rasipuram is in the North East. Attur Taluk is in the North and Tiruchirapalli district in the East. Kolli hills are also called as Sathuragiri or Square hill. The hills contain of high rising peaks and ravines. The highest point in Kolli hills is 4663 feet above M.S.L, but the general level of the upper surface of the hills is not more than 3500 feet (1000m.). Its eastern and northeastern flanks drain either into Thurayur valley or the valley of the Periyar. Forest occupies 44% of the total geographical area. Farming activities occupy about 56% of the area.

MALAYALI TRIBES

Malayalis (Malai=hill, ali=dwells or inhabits) were believed to have migrated from Conjeeveram probably in 1692 A.D, They are Tamil speaking hill tribes and all are

mostly agriculturists. Their pure population can be seen in Kollihills, Yercaud, Javaduhills, Yelagiri and Bodemalai⁶.

Malayali is one of the 36 scheduled tribes of Tamil Nadu and the population of Malayali tribes forms around 54% of total schedule tribe population of Tamilnadu⁷. Most of the Malayali tribes have a general knowledge of medicinal plants that are used for first aid remedies, to treat cough, cold, fever, headache, poisonous bites and some other simple ailments. The Malayali tribes are residing in the deep forest area are still dependent on medicinal plants for their primary healthcare and treatment of various diseases. Malayali still supplement their food by gathering roots and tubers from the nearby forest areas. They eat tubers like *Manihot esculenta* and *Dioscorea oppositifolia*, etc. They are extremely hard working and can survive without the help of modern facilities. They are socio-economically backward and most of them are very poor. They are also engaged in seasonal collection of honey, bee wax and some minor forest produce. They cultivate edible plants, like tapioca, pine apple, banana, millets and cash crops such as pepper, coffee, jack fruit glove and cereals like ragi, thinai, makkasolam, samai and panivaraku.

MATERIALS AND METHODS

The fieldwork in the villages of Malayalies in Kolli hills was commenced from January 2007 to April 2009. The Malayalies settlement was located through a number of field surveys and there were 50 informants (34 males and 16 females) between the ages of 20 and 85 were consulted to gather medicinal information. Resource persons (informants or tribal practitioners or traditional healers) with the knowledge of medicinal plants were selected based on the experience in the preparation of medicines, whether he/she is a professional medicine man or women, their willingness to share their traditional knowledge and their way of acquiring knowledge as per the methodology suggested by Jain⁸. The information was collected through questionnaire, interviews and discussions among the tribal practitioners in their local language (Tamil). The questionnaire allowed descriptive responses on the plant prescribed, such as part of the plant used, medicinal uses, detailed information about mode of preparation (i.e., decoction, paste, powder and juice), form of usage either fresh or dried and method of application.

The collected plant species were identified taxonomically using The Flora of Presidency of Madras⁹ and The Flora of Tamil Nadu Carnatic¹⁰. The identified plant specimens were then confirmed with the herbaria of Botanical Survey of India (BSI), Southern circle, Coimbatore, India. The specimens were deposited in the

herbarium of ATREE, Bangalore (India). Voucher specimen numbers along with other details are given in **Table 1**.

RESULTS AND DISCUSSION

The present investigation revealed that the Malayali tribal of the Kollihills region were using 108 species of plants belonging to 59 families (Table 1) for medicinal use. Among them 31 were herbs, 17 were shrubs, 3 were small trees, 26 were big trees and 31 were climbers. The most commonly represented families were Euphorbiaceae (8) and Asclepiadaceae (5). They were using this plants to cure diseases like fever, cough, leukemia, asthma, disorders of tooth, diabetes, scabies, piles, stomach pain, indigestion, diarrhoea, menstrual disorder, uterine disorders, infertility, rheumatism, jaundice, aphrasiadic, ear diseases, joints pains, inflammation, cold, cough, skin diseases, ulcer, bone fracture, psoriasis, kidney stone, pimples, gas trouble, back pain, blood pressure, post natal problem, hydrophobia, lactation, venereal diseases, whopping cough, dandruff, constipation, paralytic, ophthalmic obligation, chest pain, blood purification, corroborant, arthritics, labour pain, epilepsy, wounds, dog bite and poisonous bites (snake, scorpion and insect). This is consistent with the general observations made earlier in relation to ethnobotanical studies on some of the other tribal communities of Tamilnadu, viz., Karthikeyani¹¹ on Irular tribe, Rajan *et al.*¹² on Kattunayaka tribe, Rajendran *et al.*¹³ on Valaya tribe, Viswanathan¹⁴ on Malayali tribe, Alagesaboopathi *et al.*¹⁵ on Paliyar tribe, Masilamani¹⁶ on Gounda tribe and Ayyanar *et al.*¹⁷ on Kani tribe.

Medicines were prepared in the form of powder, decoction, paste and juice. It was also observed that some plants were used in more than one form of preparation. Several plants were used in the form of powder: examples are *Acalypha racemosa*, *Annona squamosa*, *Gymnema sylvestre*, roots of *Senna occidentalis* leaf and stem bark of *Canthium coromandelicum*, *Macaranga peltata*. Some plants were used in the form of decoction: examples are root bark of *Holarrhena pubescens* and leaves of *Hybanthus enneaspermus*. Some plants were used in the form of paste: examples are root of *Hemidesmus indicus*, *Senna occidentalis*, *Aristolochia indica*, leaves of *Andrographis alata*, *Andrographis paniculata*, *Azima tetracantha*, *Carmona retusa* and *Lannea coramandelica*. Some plants were used in the form of juice: examples are leaves of *Leucas aspera*, *Momordica charantia*, *Datura stramonium*, *Cocculus hirsutus*, *Chenopodium ambrosioides* and *Begonia malabrica*. In some cases, fruits (*Gmelina asiatica*, *Piper*

trioicum, *Solanum erianthum*, *Terminalia chebula*, *Toddalia asiatica*) are used as medicine both in fresh and dried form.

Among different plants parts used by Malyali tribes in Kollihills, the leaves are most frequently used for the treatment of disease. External applications and internal consumption are involved in the treatment of wounds, snake bite, headache and skin diseases. In the present study, some of the medicinal plants are belonging to IUCN Red-List categories. For example *Aristolochia tagala*, *Celastrus paniculatus*, *Gloriosa superba*, *Angiopteris evecta*, *Myristica dactyloides*, *Persea macrantha*, *Acorus calamus*, *Ampelocissus indica*, *Ampelocissus araneosa*, *Aphanamixis polystachya*, *Artocarpus hirsutus* and *Canarium strictum*.

In general, fresh part of the plants is used for the preparation of medicine. When fresh plant parts are unavailable, dried parts are also used. The rhizome of *Drynaria quarsifolia*, *Arisaema tortuosum*, and leaves of *Gymnema sylvestre* are exploited commercially as excellent source of income. But unfortunately due to their over-exploitation there is a great danger of their extinction. Hence, efforts must be taken to protect these species in this area by involving the local communities in preservation and conservation aspects.

CONCLUSION

The present investigation revealed that medicinal plants still play a vital role in the primary health care of the people. The information gathered from the tribal is useful for further researchers in the field of ethno-medicobotany, taxonomy and pharmacology. This study offers a model for studying the relationship between plants and people, within the context of traditional medical system. The purpose of standardizing traditional remedies is obviously to ensure therapeutical efficacy. The value of using ethnomedical information is to initiate drug discovery efforts. This study also generated a broad spectrum of information concerning medicinal plants used by tribals. Due to lack of interest among the younger generation of tribals as well as their tendency to migrate to cities for lucrative jobs, we face the possibility of losing this wealth of knowledge in the near future.

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Table 1: Ethnomedicinal plants, local name, mode of preparation and uses in Malayalies of Kolli hills, India

S.No	Botanical Name	Family	Local Name	Parts used ,Mode of Preparation, Ethnomedicinal uses and some other plants used as ingredients
1	<i>Abrus precatorius</i> L. (KS & RKM 2475)	Fabaceae	Kundumani	Root used for poisonous bite
2	<i>Acalypha indica</i> L. (KS-10008)	Euphorbiaceae	Kuppamaeni	Leaves ground with salt applied externally to cure scabies
3	<i>Acalypha racemosa</i> Heyne ex Baill (KS & RKM 2004)	Euphorbiaceae	Siruchinni	Powder of plant leaves and sakkarakolli (<i>Gymnema sylvestre</i>) leaves with milk taken internally for diabetic
4	<i>Achyranthes aspera</i> L. (KS -10018)	Amaranthaceae	Nayuruvi	Leaf paste applied externally for dog bite and internally taken for piles
5	<i>Aegle marmelos</i> (L.) Correa (KS & RKM 2474)	Rutaceae	Vilvam	Leaf juice used for diarrhea
6	<i>Alangium salvifolium</i> (L.f.) Wang. (KS & RKM 2480)	Alangiaceae	Alangil	Root bark applied externally for skin disease
7	<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson (KS -10025)	Araceae	Kattukarunai kizhangu	Corm boiled with tamarind are taken internally to cure piles
8	<i>Andrographis alata</i> (Vahl) Nees (KS -10218)	Acanthaceae	Periyangai	Leaf paste and root paste used for snake bite
9	<i>Andrographis paniculata</i> (Burm.f.) Wall. ex Nees (KS -10020)	Acanthaceae	Siriyangai	Leaf paste mixed with milk taken internally for snake bite and fever
10	<i>Anisochilus carnosus</i> (L.f.) Wall. ex Benth. (KS & RKM 2486)	Lamiaceae	Saetropoonthalai	Leaf paste applied externally for cut wounds
11	<i>Annona squamosa</i> L. (KS -10333)	Annonaceae	Sithapalam	Dried seed powder is highly poisonous
12	<i>Arisaema tortuosum</i> (Wall.) Schott (KS -10345)	Araceae	Kattuchenai	Corms boiled with tamarind taken internally to cure piles
13	<i>Aristolochia bracteolata</i> Lam. (KS -10222)	Aristolochiaceae	Aaduthinnapaalai	Paste made from this plant applied externally on the wound of snake -bite
14	<i>Aristolochia indica</i> L. (KS & RKM -2040)	Aristolochiaceae	Eswaramooli	Root paste used for snake bite. Leaf paste used for menstrual problem
15	<i>Artocarpus heterophyllous</i> Lam. (KS & RKM 2483)	Moraceae	Palamaram	Leaves juice taken internally for ulcer
15	<i>Basella alba</i> L. (KS -10014)	Basellaceae	Kodipasalai	Leaves boiled in water and taken internally to cure piles
16	<i>Artocarpus hirsutus</i> Lam. (KS -10198)	Moraceae	Kattupala	Bark paste used for bone treatment and fruit are taken internally for strengthen the body
16	<i>Bacopa monnieri</i> (L.) Pennell (KS -10017)	Scrophulariaceae	Neerbrami	Paste of the whole plant applied externally for dog bite
17	<i>Asparagus racemous</i> Willd. (KS -10066)	Liliaceae	Thannivittan kizhangu	Root powder mixed with milk taken internally for increasing lactation, and uterine disorder
17	<i>Begonia malabrica</i> Lam. (KS & RKM -2000)	Begoniaceae	Narayanasanjeevini (or) Kalthamarai	Leaf juices with ginger taken internally for asthma complaints
18	<i>Azadiracta indica</i> A.Juss (KS -10118)	Meliaceae	Veppamaram	Leaves ground with ginger applied externally for poisonous insect bites and young leave juice taken for stomach pain
18	<i>Blepharis maderaspatensis</i> (L.) Heyne ex Roth (KS & RKM 2488)	Acanthaceae	Elumpuottei	Leaves are ground with egg and onion applied externally for bone fracture
19	<i>Azima tetraacantha</i> Lam (KS -10200).	Salvadoraceae	Mulsanguyelai	Leaf paste applied externally for dog bite and internally taken for digestive
19	<i>Boerhavia diffusa</i> L. (KS & RKM-2028)	Nyctaginaceae	Mukkaratai	The whole plant roasted with ghee taken orally and applied externally to get relief from joint and rheumatic pains and root paste used for gas trouble
20	<i>Boswellia serrata</i> Roxb.ex Colebr. (KS & RKM 2485)	Burseraceae	Vellaikunkilium	Leaf juice applied externally for skin diseases
21	<i>Cadaba fructicosa</i> (L.) Druce (KS & RKM 2680)	Capparaceae	Vizhuthi	Leaf paste mixed with coconut oil is used for sores and leaf paste mixed with egg applied externally for bone fracture
22	<i>Canarium strictum</i> Roxb. (KS & RKM 2319)	Burseraceae	Karunkungiligum	Gum is used with gingili oil in rheumatic pains & Chronic skin diseases such as psoriasis
23	<i>Canthium coromandelicum</i> (Burm. F.) Alston (KS & RKM 2389)	Rubiaceae	Karai	Root & Leaves paste used for diuretic
24	<i>Caralluma umbellata</i> Haw. (KS & RKM-2030)	Asclepiadaceae	Chirukalli	Whole plant roasted for a few minutes and paste applied for indigestion
25	<i>Carmona retusa</i> (Vahl) Masamune (KS & RKM-2031)	Cordiaceae	Korangu vethalai	Leaf paste taken internally for digestion
26	<i>Cayratia pedata</i> (Lam.) Juss. ex Gagnep. (KS & RKM 2383)	Vitaceae	Pannikodi	Leaf paste mixed with milk applied internally for ulcer
27	<i>Cayratia pedata</i> (Lam.) Juss. ex Gagnep. (KS & RKM-2048)	Vitaceae	Pannikodi	Leaves crushed with salt and ginger and applied externally for scabies
28	<i>Centella asiatica</i> (L.) Urban (KS & RKM 2684)	Apiaceae	Vallarai	Leaves juices are taken internally for nervous problems. Whole plant used for act as a brain tonic

29	<i>Chenopodium ambrosioides</i> L. (KS & RKM-2058)	Chenopodiaceae	Kattuomam	Leaf juice applied externally for skin diseases
30	<i>Cipadessa baccifera</i> (Roth) Miq. (KS & RKM 2385)	Meliaceae	Pullipuchedi	Leaf paste is taken orally to control diarrhea
31	<i>Cissampelos pareira</i> L. (KS & RKM 2686)	Menispermaceae	Appatta	Whole plant is used in diarrhea
32	<i>Cissus quadrangularis</i> L. (KS & RKM 2788)	Vitaceae	Pirantai or Pada kizhgu	Stem and leaf paste is used to cure bone fracture and root paste used for gas trouble
33	<i>Cleistanthus collinus</i> (Roxb.) Benth. ex Hook.f. (KS & RKM 2900)	Euphorbiaceae	Oduvan	Leaves are used as insect repellent in agricultural fields and fruit used for poisonous purpose
34	<i>Coccinia grandis</i> (L.) Voigt (KS & RKM 2789)	Cucurbitaceae	Koovaikodi	Leaves juices are taken internally for ulcer
35	<i>Cocculus hirsutus</i> (L.) Diels (KS & RKM-2055)	Menispermaceae	Kattukodi	Leaf juice taken internally for cure leukemia
36	<i>Cochlospermum religiosum</i> (L.) Alston (KS & RKM-2049)	Cochlospermaceae	Thanukku	Gum from the bark applied externally for bone fracture. <i>Petal</i> used for general health
37	<i>Cocos nucifera</i> L. (KS & RKM-2050).	Arecaceae	Thennamaram	Ash of the coconut shell mixed with coconut oil applied externally for itching and scarring after poisonous insect bites
38	<i>Cryptolepis buchananii</i> Roem. & Schultes (KS & RKM-2072)	Asclepiadaceae	Karunkodi	Milky latex applied externally for poisonous insect bites
39	<i>Curculigo orchoides</i> Gaertn. (KS & RKM 2910)	Hypoxidaceae	Nilapanai	Root paste are used in toothache and rhizome used for aphrodisiac purpose
40	<i>Cyanodon dactylon</i> (L.) Pers. (KS - 10005)	Poaceae	Arugampulu	Juice of this plant used for blood purification
41	<i>Datura stramonium</i> L. (KS 10100)	Solanaceae	Karuumattai	Leaf juice is taken internally for asthmatic complaints
42	<i>Dioscorea oppositifolia</i> L. (KS & RKM 2991)	Dioscoreaceae	Kavalikizanku	Tuber are used externally for reduce swellings
43	<i>Diospyros montana</i> Roxb. (KS & RKM 2917)	Ebenaceae	Vakkanai	Stem bark paste applied externally for scabies
44	<i>Drynaria quercifolia</i> (L.) J.Sm. (KS 10110)	Polypodiaceae	Mudavattukizhangu	Rhizome juice are taken internally for body pain
45	<i>Entada pursaetha</i> DC. (KS 10113)	Mimosaceae	Paparakottai	Paste of cotyledons applied externally for inflammation
46	<i>Erythroxylum monogynum</i> Roxb. (KS & RKM 2992)	Erythroxylaceae	Devadaru	Leaf paste taken internally for antiapitide
47	<i>Euphorbia hirta</i> L. (KS & RKM 2666)	Euphorbiaceae	Ammannpacharishi	Leaf juices is used for asthma and chronic bronchial infections
48	<i>Euphorbia nivulia</i> Buch-Ham (KS & RKM 2914)	Euphorbiaceae	Illaikalli	Stem mixed with green ginger is given to patients for dogbite
49	<i>Evolvulus alsinoides</i> L. (KS 10117)	Convolvulaceae	Vishnugaandhi	Fresh juice taken orally for fever
50	<i>Garuga pinnata</i> Rox. (KS & RKM 2676)	Burseraceae	Karuvambu	Juice of the leaves is used for asthma
51	<i>Gloriosa superba</i> L. (KS 10119)	Liliaceae	Kanvalipoo or Kazhappaikilangu	Paste from tuber applied externally to reduce inflammation and also used for abortion. Seed are used for epilepsy.
52	<i>Gmelina asiatica</i> L. (KS 10116)	Verbenaceae	Kumizha	Crushed ripened fruits are applied externally for dandruff
53	<i>Gymnema sylvestre</i> (Retz.) R.Br. ex Schultes (KS 10130)	Asclepiadaceae	Sirukurunjan (or) Sakkaraikolli	Leaf powder mixed with milk are taken internally for sugar complaints
54	<i>Habenaria longicorniculata</i> Granham (KS 10138)	Orchidaceae	Kozhikilangu	Fresh tuber are taken internally for fever
55	<i>Hemidesmus indicus</i> (L.) R.Br (KS 10150)	Asclepiadaceae	Nannari	Paste made from the root or this plant and aerial root of Aalamaram (<i>Ficus benhalensis</i>) applied externally for pimples in the face
56	<i>Holarrhena pubescens</i> (Buch. - Ham) Wall. ex G. Don	Apocynaceae	Palai	Decoction from the root bark taken to get relief from dysentery
57	<i>Hybanthus enneaspermus</i> (L.) F. v. Muell. (KS 10155)	Violaceae	Orithalhamarai	Decoction from the leaves taken for fever and aphrodisiac
58	<i>Indigofera aspalathoides</i> Vahl ex DC. (KS 10158)	Fabaceae	Sivanarvembu	Whole plant juice taken internally for diarrhea
59	<i>Ipomoea staphylina</i> Roem. & Schultes (KS 10170)	Convolvulaceae	Onnankodi	Leaf paste taken internally for diarrhea
60	<i>Jatropha curcas</i> L. (KS 10174)	Euphorbiaceae	Katamanakku	Latex used as mouth wash to bleeding gums and toothache
61	<i>Justica adhatoda</i> L. (KS 10171)	Acanthaceae	Aadathoda	Leaf juice from this plant used for fever
62	<i>Kleimia grandiflora</i> (Wall. ex DC.) Rani (KS 10172)	Asteraceae	Muyalkathu	Leaf paste applied for joints pains and ear problem
63	<i>Lannea coromandelica</i> (Hout.) Merr. (KS 10180)	Anacardiaceae	Udayamaram	Leaf paste applied for body pains and inflammation

64	<i>Leucas aspera</i> (Willd.) Link (KS 10248)	Lamiaceae	Thumbachedi	Leaf juice taken internally for asthma
65	<i>Macaranga peltata</i> (Roxb.) Muell.-Arg. (KS & RKM 2987)	Euphorbiaceae	Vattakanni	Bark is used to cure back pain and also use for kidney stones
66	<i>Marsdenia brunoniana</i> Wight & Arn. (KS 10249)	Asclepiadaceae	Perukurunjan	Leaf powder mixed with hot water taken orally for diabetic complaints
66	<i>Syzygium cumini</i> (L.) Skeels (KS & RKM 2456)	Myrtaceae	Navalmaram	Bark ground with ghee taken internally to get relief from chest pain and painful menstruation & seed powder taken internally for diabetic
67	<i>Mimosa pudica</i> L. (KS 10241)	Mimosaceae	Thottasurungi	Whole plants used to prevent excess menstrual bleeding
67	<i>Vitex negundo</i> L. (KS & RKM 2465)	Verbenaceae	Notchi	Leaves boiled in water taken as inhalation for asthmatic complaints and juice taken internally for rheumatic pains and epilepsy
68	<i>Mollugo pentaphylla</i> L. (KS 10249)	Aizoaceae	Parpadagam	Leaves boiled in water and taken for cooling purpose
68	<i>Waltheria indica</i> L. (KS & RKM 2466)	Sterculiaceae	chempoondu	Plant extract boiled and taken orally for cough
69	<i>Momordica charantia</i> L. (KS 10248)	Cucurbitaceae	Paavakkodi	Juice from the leaves taken after urination in the morning for menstrual disorders
69	<i>Wedelia urticaefolia</i> (Blume) DC. (KS & RKM 2469)	Asteraceae	Manjalkarisalai	Juice from this plant with keelanelli taken internally for jaundice
70	<i>Musa paradiaca</i> L. (KS 10194)	Musaceae	Vazhai	Stem & Spike are boiled and taken internally for kidney trouble
70	<i>Terminalia bellirica</i> (Gaertn.) Roxb. (KS & RKM 2477)	Combretaceae	Thandri	Fresh powder used for stomach problem
71	<i>Momordica dioica</i> Roxb. ex Willd. (KS & RKM 2483)	Cucurbitaceae	Athalai	Leaf juice used for vermifuge
71	<i>Naravelia zeylanica</i> (L.) DC. (KS & RKM 2988)	Ranunculaceae	Vatamkolli	Leaf juice used for paralysis and externally applied for skin diseases
72	<i>Passiflora edulis</i> Sims (KS 10355)	Passifloraceae	Thatpoot	Powder from the seeds and block pepper taken with milk to get relief from asthma
72	<i>Strychnos potatorum</i> L. (KS & RKM 2472)	Loganiaceae	Thethankottai	Seed used for poisonous bites
73	<i>Peperomia tetraphylla</i> (Forst.f.) Hook. & Arn. (KS 10196)	Piperaceae	Kalbirahmi	Extract from entire plant and ginger taken internally for cold & asthma
74	<i>Pergularia daemia</i> (Forrsk.) Chiov. (KS & RKM 2745)	Asclepiadaceae	Uttamani or Vealiparuthi	Leaves juice used for urinal problems, fever, gas trouble and asthma
75	<i>Piper trioicum</i> Roxb. (KS 10357)	Piperaceae	Kattumilagu	Dried fruit used for cough and cold
76	<i>Plectranthus barbatus</i> Andr. (KS 10354)	Lamiaceae	Oomavalli	Leaf extract with pepper are taken internally for cold and cough
77	<i>Psydrax dicoccos</i> Gaertn. (KS & RKM-2038)	Rubiaceae	Erubarathan or earkollimaram	Leaf extract mixed with banana taken orally to easy delivery
78	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz (KS 10359)	Apocynaceae	Sarpagandha	Root used for blood pressure
79	<i>Sansevieria roxburghiana</i> Schultes & Schultes (KS 10400)	Liliaceae	Marul	The leaf is introduced in to cure pimples and skin diseases
80	<i>Santalum album</i> L. (KS 10420)	Santalaceae	Sandanam	Powder of wood is used to cure pimples and skin diseases
81	<i>Sarcostemma intermedium</i> Decne. (KS 10458)	Asclepiadaceae	Kodikalli	In case of poisoning the plant milk stimulates vomiting
82	<i>Senna auriculata</i> (L.) Roxb. (KS 10417)	Caesalpiniaceae	Avarampoo	Seed are used for diabetes
83	<i>Sterculia urens</i> Roxb. (KS 10444)	Sterculiaceae	Senthanku	Leaf juice applied externally for wound fractures and cracked skin also used for Leukemia
84	<i>Senna occidentalis</i> (L.) Link (KS & RKM-2039)	Caesalpiniaceae	Thakarai	Root extract taken internally for stomachache
85	<i>Scilla hyacinthina</i> (Roth) Meibr. (KS 10400)	Liliaceae	Kattuvengayam	Paste made from bulb applied externally for inflammatory swelling
86	<i>Sida acuta</i> Burm.f. (KS & RKM 2400)	Malvaceae	Arivalmanaipoondu	Paste made from leaves applied to cut wound
87	<i>Solanum erianthum</i> D.Don (KS & RKM 2401)	Solanaceae	Kattuchundai	Unripe fruits are taken internally for diarrhea
88	<i>Solanum trilobatum</i> L. (KS & RKM 2409)	Solanaceae	Tuthuvalai	Leaf juice is taken orally for cough and fever
89	<i>Strychnos nux-vomica</i> L. (KS & RKM 2460)	Loganiaceae	Ettimaram	Bark ground with milk applied to poisonous insect bites, scorpion sting
90	<i>Flueggea leucopyrus</i> Willd. (KS 10100)	Euphorbiaceae	Vella poola	Leaves boiled and taken twice a day for stomachache
105	<i>Terminalia chebula</i> (Gaertn.) Retz (KS & RKM 3033)	Combretaceae	Kadukkai	Fruits are used for digestive, antiseptic and diuretic purpose
106	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook. f. & Thoms. (KS & RKM 3000)	Menispermaceae	Senthilkodi	Plant juice is taken internally for gastrouble
107	<i>Toddalia asiatica</i> (L.) Lam. (KS & RKM 3028)	Rutaceae	Milakaranai	Fruit are useful to cure fever, diarrhea, cough, wound and ulcer
108	<i>Ventilago madraspatana</i> Gaertn. (KS & RKM 3017)	Rhamnaceae	Vambadamkodi	Root bark is used to relief stomach disorders and fever

Fig.1



Fig.1: Location of study area Namakkal District –Kolli hills

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