EVALUATION OF ETHNOBOTANICAL PLANTS USED BY THE MALAMUTHANS TRIBAL COMMUNITY IN THE MEDAPPARA FOREST, WESTERN GHATS OF KERALA

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ABSTRACT

Medappara forest of Kerala was surveyed to list out the ethnobotanical plants used by Malamuthans tribal community. Totally 250 plants belonging to 86 families were reported to be present in the study area, in which Fabaceae family was the dominant one contributed 25 species followed by the families, Euphorbiaceae (16 species), Asteraceae (13 species) and Acanthaceae with 12 species and the distribution of species in the study area includes various life-forms *viz.*, trees (81 species), shrubs (53 species), herbs (78 species), climbers (35 species) and epiphytics (3 species) habits respectively. Of the 250 plant species, 237 (95%) were recognized as medicinally important and also cures 127 types of ailments. Of the 250 plant species encounted at all life-form levels. Sixteen ailment categories were classified, among them a higher number of 110 species were prescribed by the Malamuthan ethnic community for Gastro Intestinal Ailment (GIA).

Keywords: Ethnobotany, Malamuthan tribal, Medappara, Kerala.

1. INTRODUCTION

The indigenous people nurture rich knowledge about medicinal plants developed over generations by bold experimentation through trial and error methods (Sahai, 2003). This treasure of knowledge has been passed orally without any written documents and is still retained by them (Perumalsamy and Ignacimuthu, 2000). In the last few years, there has been an exponential growth in the field of herbal or traditional medicine and these drugs are gaining popularity because of their natural origin and exhibit remarkable efficacy in the treatment of various ailments (Siddhiqui et al., 1995). A vast knowledge of how to use the plants against different illness may be expected to have accumulated in areas where the use of plant is still of great importance (Diallo et al., 1999).

Ethnomedicinal studies are the suitable source of information regarding useful medicinal plants that can be targeted for domestication and management (Kunwar and Duwadee, 2003). These studies assume great importance in enhancing our traditional skills and technology about the plant grown and used for native or tribal communities for their sustenance. The use of ethnobotanical information in medicinal plant research has gained considerable attention in segment of the scientific community (Heinrich, 2000). Also, traditional medicine and ethnobotanical information play an important role in scientific research, particularly when the literature and field work data have been properly evaluated (Awadh *et al.*, 2004). Many reports on ethnobotanical studies in the Nilgiri Biosphere Reserve of Western Ghats are available (Abraham, 1981; Parthasarathy, 1995; Rajan *et al*, 2003; Sivakumar and Murugesan, 2005; Pradheeps and Poyyamoli, 2013; Sharmila *et al.*, 2014).

However no studies on ethnobotanical significances have been carried out in the Medappara Forest, Poovaranthode of Kerala, and a part of Nilgiri Biosphere Reserve where rich diversity of plant species is available. Hence the present study is aimed to document the medicinal plants of ethnobotanical importance in the study area of Medappara forest during the period between June, 2014 and February, 2015.

2. MATERIALS AND METHODS

2.1. Study area

The present study was made in Medappara Forest at Poovaranthode, Thamarassery Range which belongs to western parts of Nilgiri Biosphere Reserve, the Western Ghats, Kerala which spreads over an area of about 1400 hectares (Fig.1). It is a tropical moist evergreen forest consisting of multistoreyed structure encompasses high species content. The geographical location of the study forest is 11° 23'45" N and 76° 06' 18" E and its altitude is ranging from 800 m to 2000 m above msl.

2.2. Ethnic community

Malamuthans are one of the primitive tribal groups of Kerala living in Malappuram and Calicut districts including the study area, Medappara Forest. They are also known as Mala Namboothiris (tribal Brahmins) due to their strict beliefs and customs. The Malamuthan consider themselves as a very superior people and prefer to live isolated. They are fearless and loyal and clime to be the Malanamboothiris.

2.3. Data Collection

Ethnobotanical surveys were conducted during March, 2014 - February, 2015 in the Medappara forest of Kerala. The information was gathered through questionnaires, personal interviews and discussions among them (Schultes, 1962; Jain, 1989; Jain and Goel, 1995). The questionnaire contains the details of the plants, parts used, medicinal uses and mode of preparation of remedies. The taxonomic identification of the plant specimens were done with the help of local and regional floras viz., Flora of Presidency of Madras (Gamble and Ficsher, 1957) and Flora of Tamilnadu Carnatic (Mathew, 1983). The collected plant species were dried for herbarium preparation and the same were maintained in the Department of Botany, Kongunadu Arts and Science College, Coimbatore.

2.4. Ailment Categories

Based on the information obtained from the traditional healers in the study area, all the ailments were grouped into 15 categories viz., Gastro-Intestinal Ailments (GIA), Dermatological Infections/Diseases (DID), Respiratory Systems Diseases (RSD), Genito-Urinary Ailments (GUA), Fever (Fvr), Skeleto-Muscular System Disorders Circulatorv (SMSD). Poisonous Bites (PB), System/Cardio-vascular Diseases (CSCD), Endocrinal Disorders (ED), Dental Care (DC), Hair Care (HC), Ear, Nose, Throat problems (ENT), Cooling Agents (CA), Liver Problems (LP), General Health (GH) and Insecticidal(IC).

3. RESULTS

3.1. Documentation of indigenous ethnomedicinal knowledge

The present study revealed the use of 237 species of plants distributed in 196 genera belonging to 86 families which were commonly used by most of the Malamuthan traditional healers for the treatment of 127 types of diseases. The prominent family of medicinal plants was Fabaceae with 25 species followed by Euphorbiaceae, Asteraceae and Acanthaceae with 16, 13 and 12 species respectively. For each reported species, botanical name, family, parts used and ailments treated were provided (Table 1).

The medicinal uses of plants gathered in the present study were compared with the previously published information from various parts of India (Dasture, 1962; Pal and Jain, 1998; Maheswari, 2000; Sahoo *et al.*, 2001; Suresh Babu, 2001; Shiva *et al.*, 2002; Anilkumar, 2003; Kirtikar and Basu, 2005; Alice and Asha Sankar, 2007; Deshpande *et al.*, 2010; Hrudayanath and Rout, 2011; Ayyanar and Ignacimuthu, 2011; Venkatachalapathi *et al.*, 2015). The data showed that no plant was reported as a new medicinal plant as all the plants were reported with different uses elsewhere.

3.2. Ailment Categories

Based on the information obtained from the traditional healers in the study area, all the reported ailments were categorized into 16 categories (Table 2). Among the various ailment categories analyzed, higher number of 110 species was prescribed for a Gastro-Intestinal Ailments (GIA). Next to this, 86 plants were used for the treatment of Dermatological Infections or Diseases (DID) followed by 82 species for Skeleton- Muscular System Disorder (SMSD). For all other ailment category except insecticidal property, generally more than 5 species were used by the Malamuthan tribal communities in the study area, Medappara forest. However, for insecticidal properties (IC) only 2 species viz., Cycas circinalis and Duranta erecta were used. This data indicates the usefulness of various species for many ailment categories by the tribal community in the studyarea.

3.3. Life-form and parts used

The percentage of species distribution in various life-forms was varied markedly (Fig 2). Trees were the primary source of medicine (78 species) followed by herbs (71 species) and shrubs (52 species). Among the different plant parts used, the leaves (79 species) were most frequently used for the treatment purposes. Similarly, the root parts were also prescribed mainly (from 71 species) for many ailments. Very less number of species, less than 2 were used for their parts like corm, petiole, tuber, buds, twigs and grains.

4. DISCUSSION

Ethnobotany is perhaps the most important method to identify and study natural plant resources and their management by indigenous people.

Sl. No.	Name of Species	Family	Parts used	Medicinal/other economic uses	*Ailment category
1	Abrus precatorius,L.	Fabaceae	Roots, seeds, leaves	Roots, seeds and leaves are anti-phlogistic, aphrodisiac and anti-ophthalmic properties. It is used as diuretic tonic and emetic affections of nervous system and hair growth.	ENT ,SMSD, HC
2	Acacia caesia,(L.) Willd.	Fabaceae	Bark, leaves	The bark is used to produce a substance for washing hair, which can be used to headlice.It can be also used to stupefy fish. The flowers may be used ornamentally. Tender leaves are used in the treatment of migraine.	HC, SMSD
3	Acacia catechu (LF)Willd.	Fabaceae	Bark	The liquid is very good for people suffering from obesity. The extract of the plant is good for curing sore throat, bronchitis and body pains. Bark used as an antipyretic as well as anti-inflammatory substance. It cures psoriasis, anaemia, ulcers, constipation and pain in the chest.	GH, ENT, RSD, DID, GIA,
4	Acacia concinna DC.	Fabaceae	Fruit, leaves	The tree is food for the larvae of the butterfly. The "fruit for hair" used as a traditional shampoo. An infusion of the leaves has been used in anti- dandruff preparations. The leaves have an acidic taste and are used in chutneys.	HC,
5	Achyranthes aspera L.	Amaranthaceae	Whole plant, leaves, root	Decoction is used in fever and stomach diseases. Root ash is used as tooth powder in pyorrhea. Used as antispasmodic, astringent, Diuretic, odentalgic.	GIA, DC, SMSD
6	Achyranthes prostrata,(L.) Blume.	Amaranthaceae	Roots, whole plant	Used by the Malays externally and internally. Decoction used for coughs. Decoction of roots used for desentery. In Cameroon plant used in prescriptions for articular rheumatism.	RSD, GIA, SMSD
7	Actinodaphne hookeri ,Bedd.	Lauraceae	Rhizome	The plant is used for aging, atherosclerosis, cancer, diabetes, dysentery, mania, urinary disorders and wound. Rhizome boiled is used for curing dandruff. The plant is used in bronchitis and gynaecological disorders.	GH, ED, GIA, RSD, SMSD, GUA
8	Adhatoda zeylanica Medic.	Acanthaceae	Leaves	Leaves are used against glandular tumors. The leaf extract is used in the treatment of asthma for many centuries. It relieves breathesnes	RSD, SMSD
9	Adiantum philippense L.	Adiantaceae	Frond, root	Fronds either in decoction or syrup utilized as Adiantum capillus veneries. Roots used for strangury and for fever due to elephantiasis. Used for cough, leprosy, hair falling. Decoction of fresh leaves used as stomachic and diuretic;	GUA, Fvr, RSD, HC, GIA, GH, ED

Table 1. List of plants with their families, parts used and uses included in major ailment categories.

				used as a cure for dysentery. Fronds extract used in fever, asthma and bronchitis.	
10	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	Fruits, root, bark, leaves	Fruits are used in chronic dysentery conditions, accompanied by loose stools alternating with occasional constipation, the ripe fruit is widely used in different formulations. The plant is useful in treating insomnia. Used as cooling agent and in diarrhoea. The leaves are used in the treatment of diabetes.	GIA, GH,CA
11	Aerva lanata (L.) Juss.	Amaranthaceae	Whole plant	Used for treatment of snakebite. Leaves used for soup and spinach, plants included in Dasapushpam. The plant also used against cephalalgia and strangury.	PB,
12	Ageratum conyzoides, L.	Asteraceae	Whole plant	Whole plant is used as a nervine tonic. Decoction or infusion of whole plant is used in diarrhoea, dysentery, colic with flatulence. Leaves are styptic, vulnerary and useful in haemorrhoids and sores.	SMSD, GIA,
13	Aglaia elaegnoidea (Juss.)Benth.	Meliaceae	Fruit	Fruit is antidiarrhoeal, alternative, astringent, tonic, employed in leprosy, burning sensation of the body, inflammations and febrile complaints; seeds used in painful matuaration.	GIA, DID
14	Albizia falcataria (L.)Fosberg.	Fabaceae	Leaves, seeds, wood	Leaves and seeds are used for eye problems. Wood is used for making paper pulp.	ENT
15	Albizia chinensis (Osbeck.)Merr.	Fabaceae	Wood	Wood is used for making furniture, packing box, tea box etc.	-
16	Albizia labbeck (L.)Benth.	Fabaceae	Bark, flower, seed	Bark, flower and seed is used against cough, asthma, leprosy and seminal weakness.	RSD,
17	Allmania nodiflora ,(L.)R.Br.exwight in Hook	Amaranthaceae	Ripe fruits, leaves	Ripe fruits are used in the treatment of constipation and dysentery.Leaves;febrifuge	GH, GIA
18	<i>Alpinia galanga (</i> Linn.)Willd.	Zingiberaceae	Rhizome	Rhizome is useful in rheumatism, bronchial catarrh, tonic, stomachic,carminative, stimulant expectorant, antispasmodic, anti-amphetamine and diuretic properties.	SMSD,RSD, GIA.
19	Alstonia scholaris (L.)R.Br.	Apocynaceae	Bark, milky latex	Bark and milky latex is used in the treatment of malarial fever, ulcer and helminthiasis.	Fvr, GIA
20	Alstonia venenata R.Br.	Apocynaceae	Bark, fruit	The plant is used as snake antivenom by the tribals. Roots and fruits are useful for skin diseases, leprosy, cobra and other venomous bites, epilepsy, fatigue, fever, syphilis, insanity, helminthiasis as remedy for impure blood.	PB, DID, Fvr, CSCD, SMSD
21	Alternanthera brasiliana ,L.	Amaranthaceae	Leaves	The plant is used against cough and diarrhoea in Brazilian	GIA, DID,

				popular medicine. Also used in inflammation. The leaves used in wounds.	
22	Alternanthera sessilis, (L.) R.Br.ex.DC.	Amaranthaceae	Whole plant	The plant is bitter, sweet, astringent, acrid, constipating, depurative, digestive and useful in vitiated conditions of kapha and pitha, burning sensation, diarrhoea, leprosy and skin diseases.	GH, RSD, GIA, DID
23	Amorphophallus hohenackeri ,(shott)Engl.&Gehrm.	Araceae	Corm	Corm is used for the treatment of piles, prostatic hyperplasia. Corm is prescribed for bronchitis, asthma, dysentery, enlargement of spleen, elephantiasis etc. The plant is used in the treatment of fevers, skin diseases,	GH, RSD,
24	Andrographis paniculata (Burm.)Wall.	Acanthaceae	Whole plant	intestinal worms and flatulence. The decoction of plant is administered against chronic fevers, intestinal worms and dyspepsia.	Fvr, DID, GIA,
25	Angiopteris helferiana,C.Presl.	Angiopteridaceae	Frond, rhizome, stem	The stem and rhizome are used in treatment of indigestion and other bowels related problems of cattle and goats. The portion of bark is given orally to cattle in dysentery occurring during rainy seasons.	GIA,
26	Antidesma montanum Blume.	Euphorbiaceae	Leaves, fruits	Leaves are considered as an antidote to the sting of cobra. Fruits are edible.	PB,
27	Aristolochia acuminata, Roxb.	Aristolochiaceae	Root, leaves	The roots are used to treat malaria, typhus fever, small pox and pneumonia. Poultice of roots are used on open wounds and skin ulcers. Leaves used as antidote for poisonous stings and also to treat skin diseases.	Fvr, DID, GIA, PB
28	Aristolochia indica ,L.	Aristolochiaceae	Root , shoot	The root is used for the treatment of snake bite. Shoot extract is used for abdominal pain.	PB,
29	Artocarpus heterophyllus, Lamk.	Moraceae	Fruit, latex	Latex applied externally on burns. Fruits are edible, sweet taste used in treatment of cancer. Wall of the young fruit is removed and the inner portion is cooked in goat milk and eaten for ulcers. Juice applied externally to glandular swelling and abscesses to promote suppuration.	SMSD, GIA,
30	<i>Artocarpus incisus</i> (Thunb.) L.f;suppl.	Moraceae	Roots, bark, petiole, fruits, exude gum	Exude gum is used for boils. Roots are used for diarrhoea and dysentery. Root bark is utilized in the treatment of fractures.Petiole used for eyesores and irritation. Fruits are edible.	GIA, ENT

31	Asparagus racemosus, Willd.	Asparagaceae	Tuberous roots	The roots are bitter, sweet, emollient, cooling, nervine tonic, constipating, ophthalmic and tonic. They are useful in nervous disorders, dyspepsia, diarrhoea, dysentery, tumours, burning sensation, inflammations and ophthalmopathy.	CA, SMSD, GH, GIA,DID, ENT	
32	<i>Asystasia gangetica</i> (L.) Anders.	Acanthaceae	Whole plant	Juice of the plant administered to children suffering from swellings, worms and rheumatism.	SMSD, GIA	
33	Atlantia racemosa ,W.& A.	Rutaceae	Leaves	Fresh leaves are used against honey bee sting.	PB	
34	Averrhoa bilimbi Linn.	Oxalidaceae	Flower, stem, fruit	Flowers and stems are good source of iron, vitamin B and C. Fruit is astringent, stomachai and cooling; in the form of curry useful in piles and scurvy.	GIA, CA, GH,	
35	Baccaurea courtallensis (Wight.) Muell.Arg.	Euphorbiaceae	Fruits	The fruits are acidic in taste and are edible.	GH	
36	Baliospermum axillarae Willd.	Euphorbiaceae	Root	Root is used in the treatment of dropsy, constipation, anaemia.	GH	
37	Bambusa bambos (L.) Voss	Gramineae	Leaves, buds, root	Tender leaves or buds decoction are used to relieve menstrual irregularities. Decoction of tender buds used for leucorrhoea, fever in children and diarrhoea. Natural cure for bronchial ailments for asthma. The dried roots are powdered and prepared into paste with water and externally applied over scabies.	GUA, Fvr, GIA, RSD, DID	
38	<i>Begonia malabarica,</i> Lam.	Begoniaceae	Leaves	Leaves used for treatment of respiratory infections, diarrhoea, blood cancer and skin diseases. Very few reports on cultivation.	RSD, SMSD, DID, PB,	
39	Beloperon plumbaginifolia (J.Jacq.) Nees	Acanthaceae	Leaves, root, stem	Snake grass use initial treating snake bites. It is used for cancer. The leaves, root, stem of vishapacha is used kapha, pitha, poison bites and swelling due to viper bite.	SMSD, RSD, PB	
40	Bidens pilosa, L.	Asteraceae	Whole plant	Leaf paste is applied on cuts and wounds.	DID	
41	Biophytum sensitivum, DC.	Oxalidaceae	Whole plant	Plant juice is applied on the injured part and also for bleeding. Plant paste is applied on forehead for migraine. Fruit used as an astringent, purgative. Root bark- antiper,	DID, SMSD	
42	Bixa orellana Linn.	Rivaceae	Fruit, seed, root bark	antipyr. Seeds cordial good remedy for gonorrhea. Leaves used in jaundice and snake bite. Seed pulp used for making dye called "Arnotto" once largely used in dyeing silk and cotton.	PB, LP, GUA	

43	Blumea belangeriana, DC.	Asteraceae	Whole plant	The plant is used in traditional Chinese medicine. It is also used as decorative dry plant. The plant have pungent, bitter and antipyretic properties	Fvr
44	<i>Breynia retusa</i> (Dennst.) Alston,Ann.	Euphorbiaceae	Bark, leaves	Bark is used in diseases of nervous system, oedema, disorders of blood and conjuctivities. Leaves are employed as poultice to hasten suppuration and as a galactagogue.	SMSD, GUA
45	Bridelia retusa (L.)Spreng.	Euphorbiaceae	Bark	Bark is used in the treatment of rheumatism.	SMSD
46	Bryophyllum pinnatum, (Lam.)Kurz	Crassulaceae	Leaves	Leaves used as astringent, antiseptic and counterirritant against poisonous insect bites. Pounded fresh material is applied as a poultice for a variety of conditions: sprains, eczema, infections. Leaves used for asthma and headache.	DID, PB,RSD, SMSD
47	Caesalpinia mimosoides, Lam.	Fabaceae	Leaves	The plant is used as a fresh dietary vegetable.	GH
48	Calamus pseudotenuis, Becc.	Arecaceae	Cane, bark	The cane is used for reinforcement of walls, making basket. Barks are used to extract tannin and also for ayurvedic medicinal purposes.	-
49	Calamus rheedii, Griff.	Arecaceae	Cane	Used in Ayurvedic system of medicine for curing cough and oedema.	RSD
50	Calophyllum calaba L.	Clusiaceae	Root, leaves, flowers	Decoction of root used as a protective medicine after child birth. The leaves applied hot are reported to give relief in rheumatic pains. Preparation of flowers are used as a diuretic for diseases and ailments of the kidneys and the lower urinary tract.	SMSD, ED
51	Carallia brachiata (Lour.)Merr.	Rhizophoraceae	Stem bark, wood	The stem bark is evaluated for wound healing activity used in treatment of cuts and wounds. The wood is suitable for general construction, house building, posts, cabinet work, railway sleepers, furniture, musical instrument etc.	DID
52	Careya arborea Roxb.	Lecythidaceae	Wood , bark, fruits, flowers, stem	Wood useful; bark and fruits astringent flowers and bark used in the treatment of cough and cold; fruits edible. Stem used for tooth cleaning.	RSD, DC
53	Caryota urens L.	Arecaceae	Leaf, seed	The plant is used in hyperdypsia, fatigue and hemicarnia. Leaf bud, seed and toddy are used for diarrhoea, migraine and scorpion- sting poisoning.	GIA, SMSD, PB
54	Cassia fistula L.	Fabaceae	Bark, root, fruit	Bark, root and fruit is used in the treatment of syphilis, colic, leprosy, rheumatism, jaundice and cardiac disorder.	SMSD, LP, CSCD

55	<i>Centella asiatica (</i> L.) Urb.	Apiaceae	Leaf, whole plant	The plant extract is used in the preparation of hair oils and tonics. It is also used as a vegetable. Leaf paste used for scorpion sting. Whole plant used in the treatment of cardiac debility, abdominal disorders, epilepsy and leprosy.	HC, PB, CSCD, SMSD
56	Centratherum intermedium, Less.	Asteraceae	Whole plant	The perennials are best planted in groups suited for rockeries, as well as ground cover.	-
57	Centrocema virginianum, L.	Fabaceae	Leaves	The plants extensive root system makes it useful for stabilizing soils and controlling erosion. Make a poultice from the leaves with a pinch of salt and use to reduce swelling.	SMSD
58	Chassalia curviflora (Wall.exKurz) Thw.	Rubiaceae	Root	Root decoction used for cough and malaria. It is also used as an adulterant for " sarpagandha".	RSD, Fvr
59	Chromolaena odorata, (L.) king & Robins	Asteraceae	Leaves	Leaf juice is applied externally on cuts and wounds to stop bleeding.	DID
60	Cinnamomum malabatrum (Burm.f.) Blume.	Lauraceae	Wood, leaves	The wood is used for making furniture. The plant have anti-inflammatory properties. The leaves used to making traditional food.	DID
61	<i>Cissus latifolia,</i> Lam.	Vitaceae	Whole plant	Whole plant cooked with jaggery is used for burning fever and pleuritics. Water dripped from the trunk with sugar is useful for cough, purifies blood, cure the ulcer of lungs. Crushed root boild in water is good toothache.	RSD, CSCD, GIA, DC
62	Citrullus colocynthis (L.)	Cucurbitaceae	Fruits	Fruits are given in low doses in cases of urticarial, constipation and toxemia.	GH
63	<i>Cleome burmannii,</i> wight. &Arn.	Capparaceae	Leaves, seeds	The leaves and seeds are used as a rubefacient and vesicant by traditional medicinal practitioners in Africa and Asia. They are also used to treat infections, fever, rheumatism and headache.	Fvr, SMSD,
64	Clerodendrum infortunatum L.	Verbenaceae	Bark, leaves	Bark is used for diabetes. Leaves are used as bitter tonic, vermifuge, laxative and cholagogue; fresh leaf juice used to remove ascarids,leprosy.	GIA,
65	Clerodendrum paniculatum L.	Verbenaceae	Leaves, roots	Crushed leaves are used in the treatment of dysentery. Roots contains an antidote for certain snake bites. A paste of the leaves applied to infected burns.	GIA, PB

66	Clitoria ternatea L.	Fabaceae	Root, leaf, seed	Root, leaf and seed are used against leucoderma, pulmonary tuberculosis and otalgia.	RSD
67	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	Whole plant	Whole plant is taken orally along with water three times a day for a period of two days to get relief from burning micturition.	DID
68	Commelina benghalensis, L.	Commelinaceae	Whole plant	Whole plant is used for haemorrhage, leprosy and rheumatism.	SMSD
69	Costus speciosus, (Koenig)J.E.Smith.	Costaceae	Rhizome	Rhizomes are aromatic and used for haemorrhage, fever, cough, and other respiratory diseases, diabetes, blood diseases, leprosy and other skin diseases.	Fvr, RSD, ED, CSCD, DID
70	Crassocephalum crepidiodes,(Benth.)S.Moore.	Asteraceae	Leaves, stem	Its fleshy mucilaginous leaves and stems are eaten as a vegetable. A lotion of leaves is used as a mild medicine that strengthens the stomach and excites its action. Leaves used in treatment of wounds, headache.	GIA, DID, SMSD
71	Crotalaria pallida (Dryand.)Ait.	Fabaceae	Roots, leaves	Roots and leaves are used for diarrhoea, dysentery, bleeding disorders, swelling, leprosy and other skin diseases.	GIA, SMSD, DID
72	Crotalaria verrucosa L.	Fabaceae	Root, leaf, seed	Plant is used for vomiting, diarrhoea, dysentery, bleeding, emetic, swellings, leprosy and other skin diseases.	GIA, SMSD, DID
73	<i>Cuphea hyssopifolia,</i> Kunth in HBK , Nov.Gen.	Lythraceae	Whole plant	Oils and serums derived from the plant often used in prevention of organ stones. Subsidence of consumption and fever, curing of infection especially with eyes.	Fvr, ENT
74	<i>Curculigo orchioides</i> Gaertn.	Hypoxidaceae	Root stalk	It is used in piles. It also used in the treatment of leucorrhoea, asthma, hydrophobia. The root poultice is	GH, RSD, DID
75	<i>Cyathia gigantia</i> ,(Wall.ex Hook)Hottum.	Cyathiaceae	Whole plant	applied for itching sensation and rashes. The plant useful in continuous fever. Gum is used as a binder and disintegrater in tablets.	Fvr
76	Cycas circinalis Linn.	Cycadaceae	Male cones, bark	Male cone marketed and used to prevent the entry of mosquitoes and other insects in to houses /dwellings including cowsheds. Children are given bath in water soaked with bark and peeling to prevent skin diseases.	IC, DID
77	<i>Cyclea peltata</i> (Lam.) Hook.	Menispermaceae	Tuber	Tuber is used for dysentery.	GIA

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78	<i>Cyperus cyperinus,</i> (Retz.) Sur.	Cyperaceae	Rhizome, root	Astringent, appetiser, stomachic, anthelmintic, leprosy, thirst, fever and used for the treatment of blood diseases.	GIA, Fvr, CSCD
79	Cyperus haspan, L.	Cyperaceae	Whole plant	The plant is used for making baskets and mats. Paste of the stem bark is internally given for diarrhoea	-
80	Dalbergia latifolia Roxb.	Fabaceae	Leaf, stem bark,root	Decoction of the bark is finternally given for tharmoea Decoction of the bark is given in dyspepsia and obesity. Two-three drops of leaf juice are poured in to the ear to get relief from ear pain. Root paste applied on forehead to reduce headache.	GIA, GH, ENT, SMSD
81	Debregeasia longifolia (Burm.f.)Wedd.	Urticaceae	Stem, wood, fruits	Stem fibre is used for ropes and cordage. The wood is used for making charcoal. Fruits are edible. Used as a raw material in paper mills. Leaves are used as	GH
82	Dendrocalamus brandisii (Munro)Kurz.	Gramineae	Leaves, nodes	forage, and decoction of the leaves, nodes and silicious matter is used in traditional medicine.	GH
83	Desmodium triquetrum (L.) DC.	Fabaceae	Whole plant	Extract of herb used in piles.	GH
84	Desmodium gangeticum (L.) DC.	Fabaceae	Root	Root is used for the treatment of fever, asthma and dysentery.	Fvr, RSD, GIA
85	Desmodium heterocarpon, (L.)DC.	Fabaceae	Root	The boiled roots are used in Malaysia to poultice sore breasts, and a decoction of the plant is regarded as a tonic and bechic. In Taiwan a decoction of root is used against rickets in children.	GUA, SMSD
86	Desmodium motorium (Houtt.)Merr.	Fabaceae	Whole plant	A herbal antidote. The decoction prepared by whole plant medicinally used as an antidote.	РВ
87	Dimocarpus longan Lour.	Sapindaceae	Fruit	The fruit is used in promoting blood metabolism, soothing nerves and relieving insomnia. Pericarp have anti- inflammatory property.	CSCD, SMSD, GH, DID,
88	Diospyros paniculata Dalz.	Ebenaceae	Fruits	Dried and powdered fruits are applied to heal burns. A decoction of the fruit is used in gonorrhea, biliousness and blood poisoning.	PB, GUA
89	Drynaria quercifolia,(L.)J.Sm.	Polypodiaceae	Fronds, rhizomes	Fronds used for poulticing swellings. Rhizomes astringent, aqueous extract possesses antibacterial properties.	SMSD,
90	Drypetes roxburghii (Wall.)Hurus.	Euphorbiaceae	Leaf, fruit	Leaf and fruit are used in the treatment of cold and fever.	RSD, Fvr

91	Duranta erecta L.	Verbenaceae	Fruits	Macerated fruits yield a juice diluted in water can be used as a larvicide in ponds and swamps for killing mosquitos.	IC
92	<i>Eclipta prostrata</i> ,(L.) L,Mant.	Asteraceae	Leaves, roots	It is good for hair and skin, expels intestinal worms, cures cough and asthma. It is specific in night blindness, eye diseases and headache.	HC, DID,GIA, RSD, ENT, SMSD
93	<i>Elaeocarpus tuberculatus</i> Roxb.	Elaeocarpaceae	Fruits, bark	The fruits are appetizer and sedative and are useful in cough. Wood used for planking. Decoction of the bark used in haemetemesis, indigestion and biliousness. Nuts used as remedy for rheumatism, typhoid fever and epilepsy.	GIA, RSD, SMSD, Fvr
94	Elephantopus scaber, L.	Asteraceae	Root, leaves, flower	Whole plant is used for diarrhoea, hemorrhage, urinary calculi, leprosy, retention of urine, bronchitis, skin disease, intermittent fever, hepatopathy, ophthalmopathy, cough and swellings.	GIA, ED, RSD, DID, Fvr, ENT, SMSD
95	Eletteria cardamomum, Maton.	Zingiberaceae	Capsule	The dried capsule is chewed for pleasant aroma and pungent taste.	GH
96	<i>Embelia ribes</i> Burm.f	Myrsinaceae	Root bark, fruits, root	Root bark is acrid, astringent, anthelminthic, antifertility, digestive, stomachic and laxative. It is used in treating intestinal parasites and worms, abdominal disorders, skin fungal infection, indigestion and headache. Leaves useful in leprosy. Fruits laxative useful in nervous debility, dyspepsia, tumors and asthma. The root decoction used for heart diseases.	GUA, GIA, DID, SMSD, CSCD
97	Emilia sonchifolia, (L.) DC.	Asteraceae	Leaves	The plant is used against dysentery. The decoction of leaves used as febrifuge.	GIA
98	<i>Epiprinus mallotiformis</i> (Muell.Arg.) Croizat.	Euphorbiaceae	Leaves, stem	The plant is used to treat digestive problems and dysentery.	GIA
99	<i>Erythrina indica,</i> Lam.	Fabaceae	Leaves	The paste of the leaves is applied on the wounds of the cattle for healing.	DID
100	Euodia lunu-ankeda Merr.	Rutaceae	Wood, leaves, root	Wood is used in match industries. Root have immune modulatory activity. Aromatic leaves used in cooking. Plant traditionally used for menstrual cramp.	GUA
101	Euphorbia hirta, L.	Euphorbiaceae	Leaves, latex, root	Latex is used in eye trouble and plant paste is applied to keep the eye cool. The root is given to allay vomiting. Leaves are used as antidote to snakebite and scorpion sting.	ENT, PB

102	Euphorbia neriifolia, L.	Euphorbiaceae	Latex	The milky latex used as purgative rubefacient and expectorant to remove warts and cutaneous eruptions. The latex is drastic purgative used to treat obstinate constipation.	GH, DID
103	Ficus benghalensis L.	Moraceae	Aerial root, Bark, latex	Milky latex applied externally for pains in rheumatism and lumbago. Aerial root is used against leucorrhoea, haemorrhages and bruises.	SMSD, GUA
104	Ficus callosa Willd.	Moraceae	Wood	The fine wood is usually used for furniture.	-
105	Ficus hispida L.	Moraceae	Bark, fruits	Bark and fruits are used for ulcers, leucoderma, psoriasis, anaemia, jaundice, epistaxis and inflammations.	GIA, DID, LP
106	Ficus racemosa L.	Moraceae	Bark, fruit	Milky juice is used in piles and diarrhoea. Decoction of the bark is administered orally to cure dysentery. The fruit is given as a tonic for pregnant women.	GH, GIA, GUA
107	Ficus tictoria G. Forst.	Moraceae	Root bark	The root bark is stomachic and aperient	GIA
108	Flacourtia jungomas (Lour.)Raeusch.	Flacourtiaceae	Leaves, fruits	Dried leaves are used to treat asthma. The fruits and leaves are used against diarrhoea,. Dried leaves used for bronchitis. Also used in treatment of dyspepsia and diabetes.	RSD, GIA, ED
109	<i>Flemingia macrophylla</i> (Willd.) Prain ex Merr.	Fabaceae	Roots	Roots used for ulcers and swellings.	GIA, SMSD
110	<i>Garcinia gummi-gutta (</i> L.) Roxb.	Clusiaceae	Fruit, root	Fruits are used for the treatment of dysentery. Milky juice contain arabin, essential oil, resin used in treatment of rheumatism and bowel complaints. Root used quire the swelling the body due to viper bite. Plant used in food preparation and preservation. Extract used in traditional medicine as purgative. Kudampuli (dry fruit) helps to promote digestion and a decoction used against arthritis.	GIA, SMSD, PB
111	Gloriosa superba L.	Liliaceae	Seeds, tubers	It is used against rheumatism. Plant used ugainst artificial of infertility, open wounds, snakebite, ulcers, arthritis, cholera, colic, kidney problems, typhus, itching and cancer. Rhizome used in the treatment of ulcer, leprosy and expulsion of placenta. The plant is used as herbal remedy for various ailments. It	SMSD, GUA, DID, PB, GIA, LP
112	Glycosmis pentaphylla, (Retz.)DC.	Rutaceae	Whole plant	is used to reduce blood glucose. Leaf fresh juice orally for liver conditions.	CSCD, LP

113	Gmelina arborea Roxb.	Verbenaceae	Root, leaf, fruit	Root, leaf and fruit is used against hallucination, piles, ulcer, growth of hair and anaemia.	GH, GIA, HC
114	Helicteres isora L.	Sterculiaceae	Root, bark, fruit	Root, bark and fruit is used in the treatment of scabies, diabetes and diarrhoea. The bark used against dysentery. Fruit demulcent, astringent and used in griping and flatulence of bowels and other abdominal complaints.	DID, ED, GIA
115	Heliotropium indicum, L.	Boraginaceae	Leaves, flowers	The plant is emollient and diuretic used as local application for ulcers, wounds. Decoction of leaves used in urticaria and fevers. Flowers considered emmenagogue in small doses and abortifacient in large doses.	GIA, DID, Fvr, GUA
116	Hemidesmus indicus (L.) R.Br.	Asclepiadaceae	Root, leaf, stem	The roots are bitter, sweet, astringent. They are useful in burning sensation, leucoderma, leprosy, skin diseases, bronchitis, syphilis and rheumatism. The leaves are useful in vomiting, wounds and leucoderma. Stems are laxative useful in inflammations.	DID, RSD, SMSD
117	<i>Hemigraphis colorata</i> Hallier f.	Acanthaceae	Leaves, whole plant	In Kerala leaf juice is applied on wounds. In Indonesia the plant is astringent, antidiarrhoeal used in the treatment of diarrhoea, dysentery, kidney stones, dermatoses and wounds. The leaves are used in the treatment of oliguria, haemorrhoids and post- partum bleeding.	DID, GIA, LP,
118	Hibiscus hispdissimus Griffith.	Malvaceae	Leaves, roots	Leaves are anthelmintic and improves digestion. Infusion of roots are considered to be useful in inflammations, helminthiasis, dyspepsia and ophthalmopathy.	GIA, DID, ENT
119	Holarrhena pubescens (Buch Ham)Wall.	Apocynaceae	Bark, leaf	Used in the treatment of amoebic dysentery, asthma, malaria and chronic bronchitis.	GIA, RSD, Fvr
120	Holigarna arnottiana Hook.f.	Anacardiaceae	Bark	In Ayurveda, the plant is used in treatment of inflammation, arthritis, hemorrhoids, obesity, tumour, cancer and skin diseases. The dried bark of the plant is used to cure amoebic dysentery. It is febrifugal, stomachic. Wood brown, close-grained, hard, used extensively in	DID, SMSD, GH, GIA
121	<i>Hopea parviflora</i> Bedd.	Dipterocarpaceae	Wood, resin	house construction for planking, as piles for bridges, for making platform boards, agricultural implements for making railway sleepers and electric poles. The resin used as a medicine applied to sores and wounds.	DID
122 <i>123</i>	Hoya sp. Hypoestes sanguinolenta, Hook.	Asclepediaceae Acanthaceae	Leaves Whole plant	Used as a treatment for asthma. The plant is used in treatment of headache, diarrhoea and wounds. The plant also used to making bonsai.	RSD SMSD, GIA, DID

124	<i>Hyptis suaveolens,</i> (L.) Poit.	Lamiaceae	Leaves	The plant is stimulant, carminative and lactagogue. Infusion used in catarrhal conditions, uterus affections and parasitical cutaneous diseases. Leaf juice given in colic.	GIA, ENT	GUA,
125	<i>Ichnocarpus frutescens</i> (Linn.) R.Br.	Apocvnaceae	Root	Root is used for treatment of fever, seminal weakness and diabetes. Plant is useful in amenorrhoea, dysphagia, eye disorders	Fvr, ED	
126	Impatiens balsamina, L.	Balsaminaceae	Leaves, seeds	as sores and redness, urinary, rheumatism and vomiting. Juice of leaves and branches is effective against burns, also for snakebite.	ENT, SMSD, GUA	ED, PB,
127 128 129 130	Impatiens cuspidata (Wight &Arn.) Impatiens hensloviana Arn. Impatiens minor, (DC.)Bennet. Impatiens scapiflora, Heyne ex Roxb.	Balsaminaceae Balsaminaceae Balsaminaceae Balsaminaceae	Whole plant Whole plant Whole plant Whole plant	The plant is used for treatment of skin diseases. The plant is used for treatment of blood related diseases. The plant is used as an ornamental and cosmetics. In North America the plant have been used as herbal remedies for the treatment of bee stings, insect bites and stinging nettle rashes.	DID CSCD DID PB	
131	Ipomoea hederifolia, L.	Convolvulaceae	Leaf	Leaf juice is applied for cuts and wounds.	DID, RS	D
132	<i>Ipomoea mauritiana</i> Jacq.	Convolvulaceae	Leaves, root	The leaves and roots are used externally to treat tuberculosis and for the treatment of external and breast infections. The decoction of the tuberous roots are used for the preparation of medicinal wine.	GUA	
133	Ipomoea nil, (L.) Roth.	Convolvulaceae	Seeds, leaves	Seed is acrid, light, anthelmintic, purgative and blood purifier. It cures inflammations, abdominal diseases. Juice of leaves used for fever, headache and bronchitis.	CSCD, SMSD, F	Fvr, RSD
134	Ipomoea obscura, L.	Convolvulaceae	Leaves	The leaves have a pleasant smell and mucilaginous taste, used as valuable application in aphthous affection. Leaves used for eye diseases.	ENT	
135	Ixora coccinea, L.	Rubiaceae	Roots, leaves,	Roots, leaves and flowers used as a blood purifier, antiseptic, infantile skin ailments, diarrhoea, dysentery,	CSCD, GIA,	DID, Fvr,
136	<i>Justicia gendarussa</i> Burm.f.	Acanthaceae	Leaves, tender shoots	fever, sores, chronic ulcers and catarrhal bronchitis. In the form of decoction it is given in chronic rheumatism.	ENT, RS SMSD	3D
137	<i>Justicia japonica,</i> Thunb.	Acanthaceae	Whole plant	Plant extract is used as antiperiodic.	Fvr	
138	<i>Knema attenuata</i> Hook.f.&Thoms.JWarb.	Mvristicaceae	Seed	Medicated ghee is used for treatment of spleen disorders, breathing disorders and tastelessness.	RSD	

139	<i>Kyllinga nemoralis,</i> (J.R & G.Frost.) Dandy ex Hutch. &Dalz.	Cyperaceae	Whole plant	The plant widely used throughout the world and frequently used for its anti-venom property. It is having analgesic, antidiabetic, anticancer, hepatoprotective, antioxidant and antimalarial properties. The tubers are astringent and febrifuge.	ED, GIA, DID, Fvr,
140	Lagerstroemia reginae Roxb.	Lythraceae	Root	Root is stimulant and used in the treatment of fever.	Fvr
141	Lantana camara L.	Verbenaceae	Whole plant	Leaves is used for haemorrhage, disease of kapha and diarrhoea. Decoction of whole plant is given in tetanus, rheumatism, malaria and for ataxy of abdominal viscera.	RSD, GIA, PB, SMSD, Fvr
142	Leea sambucina (Burm.f.),Merr.	Leeaceae	Leaves, twigs	Leaves and twigs have antiseptic properties and are used for poulticing. Root thirst reliever, cooling properties.	DID, CA
143	Lepianthes umbellata (L.)Rafin.	Piperaceae	Leaves	Leaves are used for poulticing.	DID
144	Leucas aspera Spr.	Lamiaceae	Leaf, root	The leaf paste is applied on forehead for the relief of headache. The leaf decoction is used in the treatment of scabies. The root decoction is used for the treatment of snakebite, also used as an antidote to poison.	SMSD, DID, PB
145	<i>Lindernia viscosa,</i> (Hornem.) Merr.	Scrophulariaceae	Whole plant	The plant is used in traditional medicine.	GH
146	Lipocarpha chinensis,(Osbeck) Kern. Lobelia nicotianifolia, Roth ex	Cyperaceae	Whole plant	The plant is used for ornamental purposes.	-
147	Roem.&Schult.	Lobeliaceae	Leaves	It is used to treat asthma and bronchitis. It causes irritation of mucous membrane, toxic.	RSD
148	Ludwigia octovalvis, (Jacq.)Raven.	Onagraceae	Whole plant	Whole plant is useful in dyspepsia, verminosis, flatulence, strangury,dropsy,cough,asthma and neuropathy.	GIA, RSD, SMSD
149	Lygodium flexosum (L.) SW.	Lygodiaceae	Root	Used as an expectorant. Fresh roots used in external applications for rheumatism, sprains, scabies, eczema and wounds.	RSD, SMSD, DID
150	Macranga indica Wight.	Euphorbiaceae	Leaves, fruits	Different parts of the plant are used quite frequently in various traditional medicines. Sometimes a gum exuded from the cut branches, petiole bases, young shoots and fruits of the plant are applied externally to get relief from venereal sores. Leaves used in bronchial troubles and consumption.	GUA, RSD
151	Mallotus philippensis (Lam.)	Euphorbiaceae	Fruits	Glandular hair from fruits yield a reddish powder used as	GIA

	Muell.Arg.			an anthelmintic and useful in cutaneous affections. It is also used against tapeworms, abdominal disorders, haemopathy andleprosy.	
152	<i>Mastixia arborea (</i> Wt.)Bedd.	Cornaceae	Fruits, wood	The plant is used against uterus diseases. Fruits green to be taken as stomach medicine. Small - sized timber used for fuel wood.	GUA, GIA
153	Melastoma malabathricum L.	Melastomataceae	Bark, leaves	Bark and leaves are used in diarrhoea, dysentery, mucous discharge, piles and haemorrhages.	GIA, GH
154	<i>Melia azedarach</i> Linn.	Meliaceae	Leaf	Leaf paste mixed with rice water taken cures dysentery.	GIA
155	<i>Merremia vitifolia,</i> (Burm.f)Hall.f.in Engl.,	Convolvulaceae	Whole plant	Whole plant is used for urethral discharges. Roots are eaten by tribals as a stomachic.	GIA, GUA
156	Mesua ferrea L.	Clusiaceae	Root, flower, leaves oil	Root bark is astringent and aromatic used in rheumatism. Leaves are used as poultice for pustular eruptions. Flowers are used in cough attended with expectoration.	RSD
157	Michelia champaca Linn.	Magnoliaceae	Wood, flower, bark, fruit	The wood is used as fire wood .The flower is used for the treatment of kapha, pitta. Bark, flower and fruit used in the treatment of amenorrhoea, gastritis and cough.	RSD, GUA
158	Miconia calvescens DC.	Melastomataceae	Wood	The plant used for construction or stuck on wheels of bulldozers.	-
159	Microsorum nigrescens (Blume) Copel.	Polypodiaceae	Fronds	Used against nasal infections, extract is used as a source of medicinal agents to cure urinary tract infections.	ENT, ED
160	<i>Microstachys chamaelea</i> , (L.) Muell. Arg.	Euphorbiaceae	Whole plant	Decoction given with ghee as atonic; also applied in vertigo. Juice used in diarrhoea.	GIA
161	<i>Mikania micrantha</i> , Kunth in HBK , Nov. Gen.	Asteraceae	Whole plant	It is used to heal cuts and stop minor external bleeding. Used as a local antiseptic medicine.	DID
162	Mimosa diplotrica,C. Wight.	Mimosaceae	Whole plant	In Indonesia, the plant is used as a fodder to buffaloes. It is used as a garden flower. It is used as a herbal medicine	НС
163	Mimosa pudica, L.	Mimosaceae	Roots, leaves	Root decoction is used in gravel and urinary complaints. Juice of leaves used in dressings for sinus and also for sores and piles. Whole plant is haemostatic and is used in diarrhoea, uterine disorders and skin diseases.	ED, GH, GIA, GUA, DID

164	Mimusops elengi L.	Sapotaceae	Bark, fruit	Bark is used treat diarrhoea and dysentery. A decoction of bark is used as gargle. The fruit and bark possess tonic and astringent properties.	GIA, RSD
165	Mitracarpus verticillatus (Schum. &Thonn.)Vatke	Rubiaceae	Whole plant	Extract useful in cosmetics for lightening skin, removing brown patches.	DID
166	Morinda citrifolia L.	Rubiaceae	Root	Root used for making dye. "Al-Dye" red, purple, chocolate shades are produced on mordant cotton, silk or wool. The plant have an anti-inflammatory and anti-oxidative property.	DID
167	Mucuna pruriens (L.)DC.	Fabaceae	Root, leaf, seed	Root, leaf and seed is used against dropsy, helminthiasis and sterility.	SMSD, GIA
168	Murdannia spirata,(L.)	Commelinaceae	Whole plant	It is used as fodder for animals.	-
169	Mussaenda frondosa, L.	Rubiaceae	Whole plant	The plant is astringent, useful in bronchitis, cough, fever, inflammation, jaundice, leucoderma. Leaves are useful in inflammation, to expel intestinal worms, ulcers and on swellings and headache.	RSD, Fvr, DID, LP, GIA, SMSD
170	Myristica beddomei King.	Myristicaceae	Dried fruits,seeds	It is used in Ayurvedic medicine .And has been shown to have anti-cancer and anti-inflammatory properties. The roots and bark are acrid, bitter, stomachic and	SMSD, DID
171	Mytragyna parvifolia (Roxb.)Korth.	Rubiaceae	Root, bark	febrifuge. A decoction of the root is taken to relieve asthma and diorrhoea. The plant is used in menorrhagia, piles, minor skin wounds, fistula and diabetes.	GIA, RSD, GH, DID, ED
172	<i>Myxopyrum spilacifolium</i> Blume.	Oleaceae	Stem, oil	Oil is used as a medicine to migraine in siddha medicines. Stem also used as a medicine for migraine.	SMSD
173	Naregamia alata W. & A.	Meliaceae	Whole plant	Used for the treatment of rat poison and doing naseum in snake treatment. Also used for rheumatism and inflammations.	PB, SMSD, DID
174	<i>Naringi crenulata</i> (Roxb.) Nicolson.	Rutaceae	Root, stem, bark, leaf	Exhibited significant antitumour activity .Root is used as remedy for cobrabite, vomiting and desentery. Bark is used as a remedy for puerperal fever and pitta.	SMSD, PB, GIA, Fvr, RSD
175	Ochlandra scriptoria, (Dennst.)Fischer.	Poaceae	Stem	Thin, tough and pliable strips of immature culms are used to make textiles, mats and screens, lashings etc. Stem used to make flute.	-
176	Ocimum basilicum, L.	Lamiaceae	Leaves, seed	Whole plant is used for cough, asthma, bronchitis, ophthalmia, giddiness, intermittent and malarial fever, catarrh, otalgia, cephalalgia, dyspepsia and spasmodic affections.	RSD, ENT, Fvr, GIA, SMSD

177	Oldenlandia auricularia,(L.)K.Schum.	Rubiaceae	Rhizomes	The rhizomes are stomachic, carminative, stimulant and tonic and are used in dyspepsia in the form of powder and decoction.	GIA
178	<i>Olea dioica,</i> Roxb.	Oleaceae	Bark, leaves	Bark and leaves used as a febrifuge and emetic.	FVr
179	Ophiorrhiza mungos, L.	Rubiaceae	Whole plant	Whole plant is useful in wounds, ulcers, helminthiasis, snake poison, hydrophobia, cancer, gastropathy and leprosy.	DID, GIA, PB, SMSD
180	Oroxylum indicum (L.) Vent.	Bignoniaceae	Bark	Decoction of bark is given in toxemia, rheumatism and cancer.	SMSD, CSCD
181	<i>Osbeckia aspera,</i> (L.) Blume.	Melastomataceae	Whole plant	The plant traditionally to treat liver diseases. Aqueous extract should immunomodulatory effects in Taiwan, a decoction of the aerial part is used as a drink to treat dysentery.	LP, GIA
182	Panjanelia longifolia (Willd.) K.Schum. Parahemionitis cordata	Bignoniaceae	Whole plant	The plant is employed in Malaya medicinally for same purposes a "Syonaka".Nervine tonic. Extract used as a source of medicinal agents to cure	SMSD
183	,(Roxb.Ex Hook.&Grev.) Fraser.	Pteridaceae	Whole plant	urinary tract infections. The rabbits ear fern used in the treatment of earaches and as a vermifuge.	ED, ENT, GIA
184	Paspalum scrobiculatum, L.	Poaceae	Grains, stem	The grains are sweet, bitter astringent useful in ulcers, flatulence, diarrhoea, hepatopathy, haemorrhages and general debility.	GIA
185	<i>Persea macrantha</i> (Nees) Kosterm.	Lauraceae	Stem bark	The plant used for the treatment of asthma and rheumatism. The stem bark used as anti- inflammatory and anti- arthritic.	RSD, SMSD,DID
186	Persicaria chinensis (L.) H.Gross	Polygonaceae	Whole plant	Whole plant is used as a tonic, anti-scorbutic and vulnerary.	DID
	Phyllanthus amarus,			Plant is used in jaundice, flue, dropsy, diabetes, asthma,	LP, Fvr, ED,
187	Schum.&Thonn.	Ephorbiaceae	Whole plant	bronchial infections, and diseases of liver .In Ayurveda used in problems of stomach, liver and kidney.	RSD, GIA
188	Phyllanthus emblica L.	Euphorbiaceae	Bark, root bark, leaves, fruits	The root bark is useful in ulcerative stomatitis. Bark is used in gonorrhea and jaundice. Leaves effective for diarrhoea. Fruits are used for cardiac diseases and tuberculosis.	GIA, LP, CSCD,
189	Pilea micropylla,(L.)Liebm.	Urticaceae	Leaves	The plant is used in gastric and intestinal troubles. Infusion is given as a diuretic. Crushed leaves are applied to bruises.	GIA, DID

190	Piper longum, L.	Piperaceae	Fruit	Fruit used in the treatment of cold and cough. Used to treatment of heart burns, indigestion and diarrhoea. The root and root bark is bitter and dry with stomachic,	RSD, CSCD, GIA
191	Plumbago rosea, L.	Plumbaginaceae	Roots, root bark	carminative astringent and anthelmintic used in gastro intestinal diseases, dysentery, diorrhoea and dyspepsia. This tincture is also used for the treatment of haemorrhoids.	GIA, GH
192	Plumbago zeylanica L.	Plumbaginaceae	Root	Root is used in the treatment of rheumatism, diarrhoea and piles.	SMSD, GIA, GH
193	Pogostemon purpurascens, Dalz.	Lamiaceae	Leaves	Leaves are styptic and used to clean wounds and for promoting granulation. Roots are used in uterine haemorrhage, snake bite and scorpion strings. Leaf juice is given in fever.	DID, GUA, PB, Fvr
194	Pongamia pinnata (L.) Prierre.	Fabaceae	Bark, leaf, flower, oil	Bark, leaf, flower and oil is used in the treatment of beriberi, diabetes, scabies and leprosy.	ED, DID
195	Pothos scandens, L.	Araceae	Root, stem, leaves	Root bruished and fried in oil for application to abscess. Stem cut smoked with camphor for relief in asthma. Powdered leaves are applied to smallpox pustules.	RSD,
196	Pouzolzia indica,(L.)Bennett.	Urticaceae	Roots	Roots mixed with Badra used in gastric problems, sores, boils, ulcers, de-worming and galactagogue.	GIA, GUA
197	Premna tomentosa, Willd.	Verbenaceae	Leaves, roots	Used to treat stomach and liver disorders. The leaves are used in treatment of cough, headache and fever. The leaves and roots are used as a diuretic, stomachic and febrifuge.	LP, RSD, SMSD, Fvr, GIA
198	Psidium guajava, L.	Myrtaceae	Fruit, seed, leaves, bark	Guava seed oil used for culinary uses, pharmaceuticals or cosmetics. In cosmetic industry, the oil is used in skin care products. A tea made from young leaves useful for diarrhoea, dysentery and fever. Fruits are edible. The entire fruit is key ingredients in punch, and the juice often used in culinary sauces, dried snacks. Bark used for tanning and dyeing purpose.	DID, GIA, Fvr
199	Pteris confusa, T.G. Walker.	Pteridaceae	Spores	The fern spores are used to screen the hyper accumulating ferns.	-
200	Pterocarpus marsupium Roxb.	Fabaceae	Heart wood, leaf, flower	Heart wood, leaf and flower are used in the treatment of fracture, rheumatoid arthritis, asthma, boils and fever.	DID, SMSD, RSD, Fvr

201	Rauwolfia serpentine Benth.	Apocynaceae	Roots	The herb is effective in treating insomnia. It is very useful in lowering the B.P. Used for the treatment of hypertension and nervousness. Root is also used for the treatment of epilepsy and snakebite.	GH, CSCD, SMSD, PB
202	Rhaphidophora pertusa, (Roxb.)Schott.	Araceae	Aerial part , stem	Whole plant is used in snake bite and scorpion sting. Stem used in ulcers, pain in the colon, bronchitis and very specific for abdominal tumour.	PB, GIA, RSD, SMSD
203	<i>Ricinus communis</i> Linn.	Euphorbiaceae	Leaves, seeds, roots, oil, fruit	Castor oil used on the skin to prevent dryness. The plant is harmless purgative and very effective in treating rheumatic and skin disorders.	DID, SMSD
204	<i>Rosa multiflora,</i> Thunb.	Rosaceae	Leaves, fruit	The leaves are poulticed and applied to sores. The fruit is diuretic, antidotal to fish poisoning, hypoglycaemic and laxative. It is used to treat constipation and articular pain and as an application to foul ulcers.	PB, GH, CSCD, GIA
205	<i>Rotala ritchiei,</i> (Clarke) Koehne.	Lythraceae	Whole plant	It is used as ornamental for acquaria.	-
206	<i>Rotheca serrata</i> (L.) Steane&Mabb.	Verbenaceae	Roots	Root is used in asthma, bronchitis, abdominal disorders, epilepsy, indigestion, respiratory diseases, burning sensation and intermittent fever.	RSD, SMSD, GIA, DID, Fvr
207	Salacia reticulata, W.	Celastraceae	Root	Roots are used for treatment of diabetes, bleeding piles, gonorrhea, inflammations, leucorrhoea, leprosy, skin diseases, wounds, ulcers, indigestion, flatulence, colic and spermatorrhoea.	ED, GH, DID, GIA, GUA
208	Samadera indica Gaertn.	Simaroubaceae	Seed, leaves, oil	Seed is emetic, purgative; used for bilious fevers. Seed oil applied in rheumatism. Leaves are used as a gargle in sore throat.	Fvr, SMSD, ENT
209	Saraca asoca (Roxb.) de Wilde.	Caesalpiniaceae	Bark, flower, seed	Bark, flower and seeds are used against dyspepsia, colic, menorrhagia, hyperdipsia and bone fracture.	GIA, GUA, ED, SMSD
210	Scoparia dulcis, L.	Plantaginaceae	Whole plant	The entire plant including the roots, possesses anti- inflammatory, anti-fertile and anti-diuretic properties. It is used in treating coryza, hyperthermia and sore throat.	DID, GUA, ENT
211	Selaginella involvens, (Sw.)Spring	Selaginellaceae	Whole plant	The plant is used to treat cirrhosis. It have antimicrobial property. Non-antibiotic source in therapeutic application of the treatment of acne development by reducing the chance of non –specific initiation and augmentation phase of the inflammatory response.	DID, LP

212	Senna alata, (L.)Roxb.	Fabaceae	Leaves	Used for treating ringworm and other fungal infections of the skin.	GIA, DID
213	Senna tora (L.) Roxb.	Fabaceae	Leaves, seeds	Leaves are purgative, used in ringworm and other skin troubles. Seeds used in leprosy, hemiplegia, skin diseases, constipation, abdominal disorders, obesity and helminthiasis.	GIA, DID, GH,
214	<i>Sida acuta</i> , Burm.f.	Malvaceae	Roots, leaves, seeds	Root is astringent, cooling, useful in nervous and urinary diseases, Disorder of blood and bile. Leaves are demulcent, diuretic.	CA, SMSD, ED, CSCD
215	Sida alnifolia, L.	Malvaceae	Roots	Used for rheumatism, neurological disorders, general debility, headache, ophthalmia, tuberculosis, diabetes, fever, uterine disorders. It is also promote strength, imparts to the body.	SMSD, ENT, Fvr, ED, GUA
216	Sida cordifolia L.	Malvaceae	Roots, leaves	Roots are astringent, diuretic tonic; infusion given in urinary troubles, cystitis, haematuria, rheumatism, neurological disorders. Leaves demulcent and febrifuge; also used in dysentery.	ED, SMSD, GIA
217	<i>Sida rhomboidea</i> Roxb.exfleming.	Malvaceae	Stem, leaves, roots	The stems are used to treat rheumatism and tuberculosis. The mucilaginous leaves are used as a demulcent and their stem and roots are used in treatment of wounds and leg ulcers in folkloric medicine.	SMSD, DID, GIA
218	<i>Sleichera oleosa</i> (Lour.) Oken	Sapindaceae	Bark, oil	Bark and oil is used in the treatment of malaria, ulcer, burns and scald.	Fvr, GIA, DID
219	Solanum nigrum L.	Solanaceae	Whole plant	The plant used in the treatment of asthma, vomiting, dropsy, rat bite and hydrophobia.	RSD, PB
220	Solanum torvum SW.	Solanaceae	Fruit , leaves	Part used and uses are similar to "Brihati".It is useful in liver as well as spleen enlargement.	LP,
221	Spilanthes calvum DC.	Asteraceae	Roots, flower heads,leaves	The flower heads are chewed to relieve the toothache and other mouth related troubles. leaves are used externally in treatment of skin diseases. Root decoction is used as	DC, DID

222	Spondias pinnata (L.f.) Kurz.	Anacardiaceae	Root, bark, leaves, fruits	purgative, diuretic and lithotriptic. The roots are useful in regulating menstruation, Bark is aromatic, astringent useful in dysentery, diarrhoea, vomiting and muscular rheumatism. Fruit is antiscorbutic and the pulp astringent used in bilious dyspepsia.	GUA, GIA, SMSD,
223	<i>Stachytarpheta jamaicensis</i> (L.)Vahl.	Verbenaceae	Whole plant	Whole plant is used for intestinal worms, venereal diseases, purulent, ulcers, dropsy, stomach ailments, vomiting, fevers and rheumatic inflammations.	GIA, GUA, Fvr, SMSD
224	Sterculia villosa Roxburg.	Sterculiaceae	Bark,	The bark yields a strong fiber used for rough cordage and the cortex yields a white gum.	-
225	Strobilanthes heyneanus Nees.	Acanthaceae	Whole plant	The ethanolic extract of whole plant is known to possess anti-diabetic, anti-implantation, estrogenic and antibacterial activities.	ED, GUA
226	Strobilanthus ciliates Nees.	Acanthaceae	Whole plant	Decoction of the whole plant used in the treatment of tooth problem.	DC
227	Strychnos nux-vomica L.	Loganiaceae	Bark, leaves, seeds	The root bark is useful in cholera. Leaves are applied as poultice in treatment of chronic wounds and ulcers. Seeds are bitter, acrid,useful in anaemia and asthma.	GIA, DID, RSD
228	<i>Syzygium munronii (</i> Wight.) N.P.Balakr.	Myrtaceae	Twigs	The twigs are used against toothache. Twigs are also used in match box and plywood industries.	DC
229	Tectona grandis L.f.	Verbenaceae	Bark, leaf, wood	Bark and leaf is used in the treatment of hyper acidity, indolent ulcers, arthritis and eczema. Wood is also used to making furniture.	GIA, DID
230	<i>Terminalia arjuna</i> (DC.)Wight & Arn.	Combretaceae	Wood, bark, stem	The wood is used for carts and agricultural implements. Powdered bark is used as appetizer. Stem bark paste is used as an ointment for wounds.	GIA, DID
231	Terminalia chebula Retz	Combretaceae	Fruit	Fruit used in the treatment of tridosa, wounds, skin diseases, cardiac disorders and cough. Fruits are powdered and used for preventing cough and fever. Used as an appetizer.	DID, CSCD, RSD, Fvr, GIA
232	<i>Thottea siliquosa</i> (Lam.)Ding Hou.	Aristolochiaceae	Roots	Roots are used in ulcers, gonorrhea, leprosy, fever, cholera, rheumatism and antidote to snake-venum.	GIA, Fvr, SMSD, PB
233	Thunbergia alata ,Boj.ex Sins.	Acanthaceae	Leaves	The plant mainly used as an ornamental plant. Leaves is	CSCD
234	Thunbergia erecta Boj.	Acanthaceae	Seeds	used as infusion (internal and external). It is used in detoxification as the first-aid. Seeds used as	DID

235	Tinospora cordifolia, Miers.	Menispermaceae	Stem, leaf, root	purgative. Stem extract is used in fevers. Stem also used for severe mouth ulcers. Leaf decoction when consumed relieve gas problem. Root is prescribed in diarrhoea and diabetes.	Fvr, DID, GIA, ED
236	Torenia bicolor Dalz.	Scrophulariaceae	Whole plant	Whole plant is used as an exanthematic ointment. Leaves are used in gonorrhoea.	GUA
237	Tragia involucrate L.	Euphorbiaceae	Leaves, stem	The leaves and stem paste is applied to arrest skin diseases.	DID
238	Tridax procumbens L.	Asteraceae	Leaf	Leaf juice is applied on cuts and wounds as antiseptic and to stop bleeding.	DID
239	Triumfetta rhomboidea Jacq.	Tiliaceae	Roots, bark, leaves, flower	Root is used in dysentery, intestinal ulcers. Bark and leaves are used in diarrhoea. Leaves and flowers are used in leprosy.	GIA
240	Urena lobata Linn.	Malvaceae	Roots	Roots are used as folk and siddha medicine.	GH
241	<i>Uvaria narum</i> ,(Dunal) Wall.exHook.F.Thoms.	Annonaceae	Root bark, leaves, stem	Decoction of root bark is given to women at the time of delivery to control fits; also used in rheumatism, bowel complaints and eczema. Leaves prescribed in rheumatism, jaundice. Stem is used for gastropathy.	GUA, SMSD, DID, LP, GIA
242	Vanda tessellata (Roxb.)Hook.	Orchidaceae	Root	Roots paste is applied one in a day for 5-6 days for rheumatism.	SMSD
243	Vateria indica, L.	Dipterocarpaceae	Plant resin	Plant resin burnt for incense, used in varnish,water proofing; essential oil as antibacterial.	DID
244	Vatica chinensis, L.	Dipterocarpaceae	Stem	A yellow transparent resin exudes from the stem is used in the manufacture of varnishes. Wood reddish brown used for building piles.	-
245	Vernonia cinerea, (L.) Less.	Asteraceae	Whole plant	The plants are bitter, acrid, thermogenic, antivitral, anthelmintic, antifungal. The roots are useful in diarrhoea, inflammations and skin diseases.	DID, GIA
246	<i>Vigna dalzellliana,</i> (0.Kzte) Verdc.	Fabaceae	Whole plant	It is used as food and drink. It is also sometimes grown for soil conservation.	GH
247	Vitex negundo L.	Verbenaceae	Leaves, root, flower	A decoction is used for steam bath for arthritis and joint pains. Root, leaf and flower is used in the treatment of malarial fever, sprains, odontalgia and otalgia.	SMSD, Fvr,
248	Wedelia chinensis (Osbeck)Merr.	Asteraceae	Whole plant	Leaf tonic is used in cough, cephalalgia and alopecia. Decoctions of whole plant are useful in inflammation, otalgia, ulcers, baldness and greyness of hair.	RSD, DID, GIA, HC, SMSD
249	Zanthoxylum rhetsa DC.	Rutaceae	Bark, fruits,	Bark and fruits are used in dyspepsia, asthma, bronchitis,	GIA, RSD,

			seeds	heart diseases, toothache, diseases of eye and ear, worm	CSCD,	DC,
				infestation, leprosy and spleenic disorders. Seeds are	ENT	
				used in cholera.		
				Rhizomes are digestive, dispels cardiac disorders,	CSCD,	GH,
250	Zingihan officingle Deec	Zingiberaceae	Rhizome	oedema, coryza, cures vomiting, piles, filariasis, anaemia,	RSD,	Fvr,
250 Zingiber officinale, Rosc	<i>Zingiber officinale</i> , Rosc.			cough, dyspnoea, fever, colic, diarrhoea, neurological	GIA,	SMSD,
				diseases, diabetes, and eye diseases.	ED, EN	νT

*CSCD – Circulatory system / cardiovascular diseases; CA – Cooling agent; DC – Dental care; ENT – Ear, nose, throat problems; DID – Dermatological infections / diseases; ED – Endocrinal disorders; Fvr – Fever; GIA – Gastro-intestinal ailments; GH- General health; GUA – Genito-urinary ailments; HC – Hair care; LP – Liver problem; PB – Poisonous bite; RSD – Respiratses; SMSD – Skeleto-muscular system disorder; IC – Insecticidal.

S. No.	Ailment categories	Biomedical terms	Tamil terms
1.	Circulatory system/	Blood purification	Rattha sutthigarippu
	cardiovascular diseases (CSCD)	Memory power	Gnabaga sakthi
		Heart problem	Idhaya noi
		Hypotensive	Rattha alutta noi
2.	Cooling agent (CA)	Body coolant	Udal kulircchi
3.	Dental care (DC)	Tooth ache	Pal vali
4.	Dermatological	Wound healing	Kaayam
	infections/diseases (DID)	Skin diseases	Thol noi
		Antiinflammatory	Alargi etirppu
		Antioxidant	
		Scabies	Sori/sirangu
		Antiseptic	Kirumi nacini
		Eczema	Thol alargi
		Itching	Arippu/poocchikadi
5.	Ear, nose, throat problems (ENT)	Eye pain	Kan vali
		Ear pain	Kathu vali
6.	Endocrinal disorders (ED)	Diabetes	Sarkkarai/neerilivu noi
		Kidney stone	Siruneeraga kal
		Urinary problem	Siruneeraga noi
		Cystitis	Siruneerpai alargi
7.	Fever (Fvr)	Fever	Kaichal
		Pneumonia	Jani
		Malaria	Murai/malaria kaichal
8.	Gastro-intestinal ailments (GIA)	Ulcer	Vayitru pun
		Stomachache	Vayitru vali
		Carminative	Iraippai kuțal vali

Table 2. Ailment categories included with various ailments.

		Gastric complaints	Vayvu kolaru
		Digestion/indigestion	Geeranam/ageeranam
		Dysentery	Seedhabaethi
		Dyspepsia	Cerimanaminmai
		Diarrhea	Vayirrup pokku
		Cholera	Kalara
		Vermifuge	Pulukkolli
		Intestinal worms	Kutal pulukkal
		Appetite	Paciyinmai
9.	General health (GH)	Piles	Mula noi
		Tonic	Sathu marunthu
		Constipation	Malaccikkal
		Depression	Mana aluttam
		Insomnia	Tukkaminmai
		Obesity	Udal paruman
10.	Genito-urinary ailments (GUA)	Delivery pain	Pirasava vali
		Menstrual problem	Matavitay thontharavugal
		Abortion	Karu kalaipu
		Male fertility	Anmai sakthi perukkuthal
		Venereal diseases	Paalvinai noi
		Galactagogue	Thaai pallai urpathi pana
		Sexual problem	Paliyal piraccanai
11.	Hair care (HC)	Hair tonic	Mudi valara
12.	Liver problem (LP)	Jaundice	Manajal kaamalai
		Liver infection	Kaleral thotru
13.	Poisonous bite (PB)	Snake bite	Pambukkadi
		Dog bite	Naikkadi
		Poisonous bite	Vishakkadi
		Detoxification	Nachu neeka
14.	Respiratory system diseases (RSD)	Asthma	Moocchu thinaral
		Chest pain	Nenju vali
		Cold	Jalathosam
		Cough	Irumal
		Expectorant	Sali
		Bronchitis	Muccukkulay alarci
		Haemoptysis	Suvacakkulaliruntu irattam varuthal
15.	Skeleto-muscular	Rheumatism	Moottu vadham
	system disorders (SMSD)	Arthritis	Kilvatam
	,	Joint pain	Moottu vali
		, <u>F</u>	

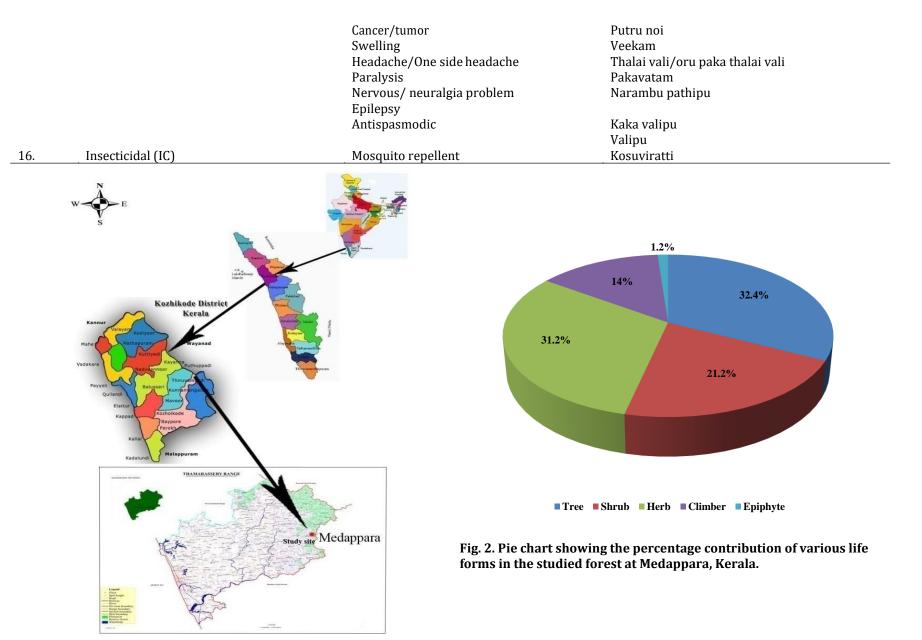


Fig. 1. Location of the study area

It enables us to work with local people to explore knowledge based on experiences and ages. The indigenous population still relies to a great extent on traditional healers and medicinal plants to meet their healthcare needs because of the perceived effectiveness, presumed safety with minimal side effects and affordability (Vliathan, 1998). Of the 16 ailment categories analyzed, a higher number of 110, 86 and 82 species were prescribed for Gastro Intestinal Ailments (GIA), Dermatological Infection (DID) and Muscular System Disorder (SMSD) respectively. It may be explained due to the presence of the respective bioactive compounds in the secondary metabolites produced by the species (Ayyanar and Ignacimuthu, 2011). It has been noted interestingly that a very little number of 2 species viz., Cycas circinalis and Duranta erecta were used for insecticidal property and also as mosquito repellent species. The presence of certain alkaloids may be the possible reason for this fact (Mayura and Phasomkusolsil, 2014).

The medicinal uses of plants gathered in the present study were compared with the previously published information from other parts of India. It showed that no plants were reported as a new medicinal plant as all the plants were reported with different uses. This fact exhibits that the medicinal plants enlisted in the study area are already prescribed by the healers of various areas in India. When the life-form is considered, higher number of species used for various ailments were trees. It may be explained that the studied forest at Medappara is a climax formation (Champion, 1939) and contains the trees as dominant and most established structures which might aid the sources of medicine consistently. Gonzalez et al. (2010) also reported the usage of more tree species for medicinal purpose in the climax forest in the western Spain due to its stable structure and consistency in availability. Among the different plant parts used, the leaves were most frequently used for medicinal purposes. Many indigenous communities elsewhere also utilized mostly leaves for the medicinal purposes (Ignacimuthu et al., 2006, 2008; Teklehaymanot et al., 2007; Srithi et al., 2009; Giday et al., 2010; Cakilcioglu and Turkoglu, 2010; Gonzalez et al., 2010 and Abdul Latheef et al., 2014). The reason why leaves were used mostly is that they are collected very easily than underground parts, flowers, fruits etc. (Giday et al., 2009) and in scientific point of view leaves are active in photosynthesis and production of metabolites (Ghorbani, 2005).

5. CONCLUSION

The present study indicated that the study area has numerous medicinal plants to treat a wide range of human ailments. Studies on traditional medicinal plants revealed that the local people from medappara forest prefer traditional medicine due to low cost and sometimes it is a part of their social life and culture so it is necessary to acquire and preserve this traditional system of medical practice. Further, studies by using animal models and subsequent clinical trials are suggested to confirm the traditional knowledge on medicinal plants, thus used for drug manufacturing by pharmaceutical industries.

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