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Studies on ethnomedicinal plants used by Malayali Gounder Tribes in Pachamalai of Eastern ghats, Tamil Nadu, India

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ABSTRACT

An ethnomedicinal survey was carried out among Malayali Gounder tribals in various villages of Pachamalai, Tiruchirapalli District, Tamil Nadu, India during August 2012 to September 2013. A total of 100 Species of ethnomedicinal plants belonging to 91 genera and 47 families were reported with the help of tribal people between the age of 40 – 75years. Dwellers provided information regarding plant species used as medicine, parts used to prepare the medicines for ailments to which the remedies were prescribed.

Key words: Ethno medicine, Medicinal plants, pachamalai, Malayali Gounder tribes.

INTRODUCTION

The existence of traditional knowledge on medicinal plants and their uses are more common among the spiritual healers locally known. India is endowed with about 50,000- plant species [1]which distributed in different bio geographical conditions associated tribal and folk knowledge systems [2]. Out of these, 10,000 species are known to be medicine[3]. Indian System of Medicine uses around 3000 plant species belonging to more than 1000 genera[4]. India has a long history in traditional health practices in local health tradition and home remedies and is especially aimed uplifting the health profile of women, children and society[5].Stated that many rural people throughout the world rely on medicinal plants because of their effectiveness, lack of modern healthcare alternatives and cultural preferences [6]. Ethnobotany study acts as a bridge between botany and tribal knowledge regarding medicinal properties of plants. The plant based traditional knowledge has become a recognized tool in search for new sources of drugs[7].

India is rich ethnic diversity and traditional knowledge on ethnomedicinal plants. The tribal's belonging to the minor communities are socially, economically and among the least advanced. But they have lot of knowledge on medicinal plants[8]. This diversified system of traditional practices prevails among the rural communities since time immemorial. These studies assume great importance in enhancing our traditional skills about the plant growth and used for native or tribal communities for their sustenance. Which threaten the existence of medicinally important plants makes it inevitable that this information be made available and preservation of their culture, traditional knowledge.

MATERIALS AND METHODS

Study area

Studies were carried out in the Pachamalai hills located at Tiruchirappalli district in Tamilnadu. The hills situated between east 78°31` longitude 11°28` North latitude at an altitude of 700 to 900 meters MSL. Pachamalai is green and natural hill range, just 80Kmsnorth of Tiruchirappalli via Thuraiyur. In pachamalai there are 87 villages, divided into four groups called NADU. They are Southern NADU-14, Van NADU-32, Kombai NADU-10and Aathi NADU-31. Public believe that persons who are living here will not be affected by nerve disease. The indigenous people in

the Pachamalai of eastern ghats of this region attempted to survey and document the medicinal plant species in the study area. This is a pioneer attempt for an exhaustive analysis of the therapeutic values of such medicinal plants. Their specific medicinal value were verified with the knowledge of local people and also conforming the details available in recent studies [9-10]

Our survey protocols are based on our previous study of the Malasars in the velliangiri Hills of India[11].To assess the consumption of indigenous medicinal plants, the present survey was carriedout during the year August 2012 to September2013, in Pachamalai hills of Tiruchirapalli district in Tamil Nadu, India. The Interview was desired to identify the indigenous knowledge of plant based remedies from local people by words of mouth and also by personal observation. The information on medicinal uses of the indigenous plants have been described after gathering it from local people, experienced and rural folk, traditional herbal medicine practitioners and also the information collected from the available literature. A total of 100 inhabitants were interviewed, randomly and selected between40 - 75 age. In addition, direct plant observation and identification was done with the help of local healers known as Vaidhyar. Information on medicinal plants, botanical name, and plant part used and mode of administration for curing ailments has been recorded. During the survey, plants have been collected in their flowering and fruiting stages as far as possible from the natural habit and standard ethnobotanical methodology was followed to collect data on ethnomedicinal aspects [12] from various villages and Flora of the Presidency of Madras,(Gamble1935), The Flora of the Tamil Nadu Carnatic,(Matthew1983), Society of ethnobotany, (Jain1989), Field and Herbarium Methods, (Jain and Rao1997), Dictionary of Medicinal plants,(Balasubiramaniyan2010) and Poorvigamaruthuva Kalangium,(Loganathan 2010) were referred for compilation of data.

RESULT AND DISCUSSION

Medicinal plant diversity

In the present study ethnobotanical survey was documented, 100 plant species are used for medicines representing 91genera and 47 families(Table 1). Among them 35 trees, 28 herbs, 13 shrubs, 4 stragglers, 4 were vine (Table - 2).Collected data contains the list of plants of different families with their medicinal uses, which are listed in the order of Bentham and Hooker classification. Based on the interview with the elder people the list of various plants used by themalayali tribes to cure various diseases were highlighted (Table – 3).The representing plants are mostly used to cure skin diseases, jaundice, cough, wounds, and urinary problems and snake bite. These are medicinally important and dominated plants are observed in Euphorbiaceae 9 Species, Mimosaceae 6 Species, Apocyanaceae 5 Species, Fabaceae 5Species, Lamiaceae 5 Species, Rubiaceae 5Species and Asclepidiaceae 4 Species.

Habit form and plant parts used

Among 100 plant species, studied 15 habit forms were identified ; tree(35), herb(28), shrub(13), straggler(4), vine(4),climbing(3), climbing shrub(2), small tree(2), straggling shrub(2), twining shrub(2), climbing herb(1), erect culms(1), rambling shrub(1), shrubby(1), under shrub(1) (fig:1). Among the various dominant medicinally important largest to decreasing orderof the family Euphorbiaceae(9), Mimosaceae(6), Apocyanaceae(5), Fabaceae(5), Lamiaceae(5), Rubiaceae(5), Asclepidiaceae(4), Asteraceae(4),Verbinaceae(4)etc, (fig: 2). Among the various plant parts used, the leaf(50), bark(17), root(14), fruit(10), stem(9), seed(8), whole plant (6), flowers(4), rhizome (2), latex(2), tuber(1), young buds(1) (fig: 3). In ethno medicinal plant species , 8 different mode are used for the treatments. The major mode of administration is juice(27), decoction(27), Leaf paste (17), stem paste(16), powder(7), tonic(5), fresh parts(4),cooking(3), (fig :4). From the ethnomedicinal survey it was obvious that the people of pachamalai possessing knowledge of medicinal plants and has ability to cure various diseases.

During the survey it was also learned that the traditional knowledge regarding ethnomedicine is declining as there is no proper documentation. The knowledge is passed down from generation to generation only by means of verbal communication. The traditional practitioners believed that knowing these medicinal plants reduce the effectiveness of the systems. The Malayali tribes of various Nadu shared knowledge of the ethnomedicinal plants to use ‘Neendaaauil’, which translate to “living long healthy life”. The malayalis are also belives in spiritualism for which they utilize many ethnomedicinal plants. Due to more demand of ethnomedicinal plants and have been motivated for conservation of these plant species.

Table-1: Family with maximum number of genus & species

S. No	Family	No. of Genus	No. of Species
1.	Euphorbiaceae	5	9
2.	Mimosaceae	4	6
3.	Apocynaceae	5	5
4.	Fabaceae	5	5
5.	Lamiaceae	4	5
6.	Rubiaceae	5	5
7.	Asclepiadaceae	4	4
8.	Asteraceae	4	4
9.	Verbenaceae	4	4
10.	Caesalpiniaceae	2	3
11.	Combretaceae	3	3
12.	Poaceae	3	3
13.	Rutaceae	3	3
14.	Amaranthaceae	2	2
15.	Anacardiaceae	2	2
16.	Liliaceae	2	2
17.	Plumbaginaceae	1	2
18.	Rhamnaceae	2	2
19.	Sapindaceae	2	2
20.	Zingiberaceae	2	2
21.	Acanthaceae	1	1
22.	Aizoaceae	1	1
23.	Annonaceae	1	1
24.	Apiaceae	1	1
25.	Araceae	1	1
26.	Convolvulaceae	1	1
27.	Cruciferae	1	1
28.	Cucurbitaceae	1	1
29.	Dioscoreaceae	1	1
30.	Hernandiaceae	1	1
31.	Loganiaceae	1	1
32.	Lythraceae	1	1
33.	Magnoliaceae	1	1
34.	Malvaceae	1	1
35.	Meliaceae	1	1
36.	Menispermaceae	1	1
37.	Moraceae	1	1
38.	Moringaceae	1	1
39.	Myrtaceae	1	1
40.	Nyctaginaceae	1	1
41.	Pedaliaceae	1	1
42.	Piperaceae	1	1
43.	Punicaceae	1	1
44.	Santalaceae	1	1
45.	Simoroubaceae	1	1
46.	Vitaceae	1	1
47.	Zygophphyllaceae	1	1
	TOTAL	**91**	**100**

Table-2: Distribution of plants under different habits

S.NO.	HABITS	NO. OF SPECIES
1.	Tree	35
2.	Herb	28
3.	Shrub	13
4.	Straggler	4
5.	Vine	4
6.	Climbing	3
7.	Climbing shrub	2
8.	Small tree	2
9.	Straggling shrub	2
10.	Twining shrub	2
11.	Climbing herb	1
12.	Erect culms	1
13.	Rambling shrub	1
14.	Shrubby	1
15.	Under shrub	1
	TOTAL	100

Table-3: Medicinal plants utility by the tribals in the Pachamalai

S. No	Botanical name	Family	Local name	Habit	Plant Parts used	Ethnomedicinal uses	Mode of administration
1.	*Wattakaka volubitis* Cooke	Magnoliaceae	Kurinjan notchi	Straggler	Leaf	Rheumatic pain.	Leaf Paste is applied topically for rheumatic pain, cough, and fever.
2.	*Annona squamosa* L.	Annonaceae	Seetha	Tree	Leaves	Hepatoprotective	Paste of leaves taken orally.
3.	*Tinospora cordifolia* (Willd.)	Menispermaceae	Seenthil	Climbing shrub	Leaf	Wound.	Leaf paste is applied topically to cure wound.
4.	*Brassica juncea* Hk. f. & T.	Cruciferae	Kadugu	Herb	Leaf, seed	Fever.	Leaves and green pods are eaten as vegetables.
5.	*Abutilon indicum* G. Don	Malvaceae	Thuthi	Shrub	Root	Piles.	Roots taken orally along with onion.
6.	*Tribulus terrestris*, L.	Zygophyllaceae	Nerunchimul	Herb	Fruit, root	Urinary troubles.	The fruit and roots are mixed with boiled raw rice, taken orally to prevent white discharge in women and to treat urinary troubles.
7.	*Aegle marmelos* L.corr. Serr.	Rutaceae	Vilvam	Tree	Leaf	Eye disease.	Juice of leaf extract applied externally.
8.	*Murraya koenigii* (L)Spreng	Rutaceae	Karuvepillai	Tree	Leaves	Diabetics, vomiting, disease resistant.	Leaf juice is taken to cure disease.
9.	*Toddalia asiatica*,, Lam.	Rutaceae	Surai	straggler	Leaves, roots, fruits	Poison reliver, fever, diarrhea, cough, wound and ulcer.	Decoction of leaves and stems used to control fever. Fresh fruits eaten to reduce fever and headache.
10.	*Ailanthus excelsa* Roxb.	Simoroubaceae	Pei maram	Tree	Bark	Fever.	Bark used in India as a powerful, tonic, juice of the leaves and fresh bark.
11.	*Azardirachta indica*A.Juss.	Meliaceae	Vembu	Tree	Leaves	Removal of worms in stomach.	Leaves ground with ginger applied externally for poisonous insect bites and young leave juice taken for stomach pain. Tender leave and bark extract consumed to eliminate stomach worms. Leave twigs with leaves are tied or hanged in front of the house to keep away evil spirits.
12.	*Scutia myrtina* (Burm. f.) Krurz	Rhamnaceae	Sudali	Straggling shrub	Leaves	Indigestion.	Leaves are cooked and eaten to increase digestion.
13.	*Ziziphus oenoplia* Mill	Rhamnaceae	Churipala chedi	Climbing shrub	Fruit	Dysentery.	Fruit extract orally to reduce dysentery.
14.	*Cissus quadranqularis*, L.	Vitaceae	Pirandai	Shrub	Total parts	Stomach irritation, hot reliever.	Stem paste mixed with egg white is applied on the affected portion in the treatment of fractures Young stems cure eaten after cooking.
15.	*Cardispermum halicacabum* L.	Sapindaceae	Mudakkathan	Vine	Whole plant	Gastric problem, dandruff.	Whole plant used for treating rheumatoid arthritis.
16.	*Dodonea angustifolia* L.f	Sapindaceae	Valeri	Shrub	Leaves,stem, root	Fever.	The stem and roots are used, The plant decoction is useful.
17.	*Lannea coromendilica*, (Houtt.) Merr.	Anacardiaceae	Uthiyamaram	Tree	Bark,leaves	Fever.	Leave paste applied for body pains and inflammation.
18.	*Mangifera indica*, L.	Anacardiaceae	Maamaram	Tree	Bark	Fever.	Bark crushed finely and juice is taken for a week to control dysentery and the latex is applied to heal the cracks.
19.	*Moringa oleifera* Lam.	Moringaceae	Murungai	Tree	Leaves, Bark	Gastric problem, poison reliever.	The leaf is used as female contraceptive.
20.	*Abrus precatorius* L.	Fabaceae	Vellai kundu mani	Straggler	Seed	Stomach pain.	Decoction of seed taken orally to cure stomach pain.
21.	*Erythrina variegata L.*	Fabaceae	Baditha	Tree	Leaves	Cough.	Leaf smeared with castor oil, Warmed and applied on the head of young babies.
22.	*Mucana pruriens* (L.)	Fabaceae	Poonai kali	Vine	Leaf	Snake bite.	Leaf extract to apply for biting area.
23.	*Pongamia pinnata* L.	Fabaceae	Pungam	Tree	Bark	Wounds in heads, Ringworm.	Dried bark powder is gently fried in coconut oilinfection and the extract is applied externally.
24.	*Tamarindus indica*,L.	Fabaceae	Puliamaram	Tree	Fruits	Eye infections, Female contraception.	The unripe pods are cooked and taken for abortion.
25.	*Bauhinia purpurea* L.	Caesalpiniaceae	Mandari	Tree	Whole plant	Carminative, Diarrhoea, anthelmintic.	Roots carminative,bark used in diarrhoea, leavesused as a fodder,flower are laxative & anthelmintic.
26.	*Cassia auriculata* L	Caesalpiniaceae	Aavaaram	Shrub	Leaves	Diabetes.	Leaves extract orally to cure diabetes.
27.	*Cassia fistula*,L	Caesalpiniaceae	Sara konrai	Tree	Bark	Fever.	A fruit pericarp grind with sugar and mad into paste is given orally for easy delivery.
28.	*Acacia nilotica* Willd	Mimosaceae	Karuvelam	Tree	Young stem	Toothache.	Young stem is used as toothbrush.
29.	*Acacia torta* (Roxb.) Craib.	Mimosaceae	Seeva keerai	Rambling shrubs	Leaves	Stomach-ache.	Leaves cooked with onion taken as food.
30.	*Albizia amara* Boiv.	Mimosaceae	Usulai	Tree	Bark	Snake bite.	Paste of leaf and root bark along with root bark of *jasminum angustifolium* Vhal and rhizome of

							Cyperus rotundus Linn. Is heated with neem oil and applied externally on affected places for 10 days.
31.	*Albizia odoratissima*, Benth.	Mimosaceae	Poosilai	Tree	Bark	Fever.	Dose: 100mg/kg, *Route*: Oral for 10 days to cure fever.
32.	*Dichrostachys cinerea*, W. & A.	Mimosaceae	Vedatharai	Shrub	Bark	Fever, skin disease.	The leaves are said to have local anaesthtic properties, and the wood is used for fence poles. Fresh bark is used to make fibre.
33.	*Mimosa pudica*, L.	Mimosaceae	Thoottalsinungi	Herb	Leaves	Eye related disease.	Whole plant used to prevent excess menstrual bleeding , hole plant paste is applied externally for head ache.
34.	*Anogeissus latifolia* Roxb.	Combretaceae	Chirumanu	Small tree	Stem bark and leaves	Cough.	Stem bark extract is administered 3 spoonfuls twice a day for 3 days. Leaves with tubers of *Dioscorea pentaphylla* are taken in equal quantities and ground. 2 spoonfuls of paste mixed with a spoonful of honey is administered daily once for 3 d. Meanwhile paste soaked in hot water and is inhaled daily once for 3 days.
35.	*Myrica esculenta*, Buch.Ham.	Combretaceae	Marutham	Tree	Bark	Allergic troubles.	Plant bark is used to preparation of tonic to cure allergy.
36.	*Terminalia chebula*, Retz.	Combretaceae	Kadukkai	Tree	Seed	Stomach pain.	Fruits are used for digestive, antiseptic and diuretic purpose.
37.	*Syzygium cumini* L.	Myrtaceae	Naval	Tree	Bark, Leaves	Fever, Diabetic.	The fruits are given with hot water used to diabetes, Bark used for diarrhea. The extract of bark mixed with goat milk and immediately consumed to stop diarrhea, Leaves extract orally.
38.	*Lawsonia inermis*, L.	Lytheraceae	Maruthani	Shrub	Leaves, root	Treatment of paranoia.	Extract of root is given twice a day as health tonic.
39.	*Punica granatum* L.	Punicaceae	Maathulai	Tree	Young buts, shoots, fruits	Dysentry, diarrhea.	The flower buds mixed with salt are used in bronchitis, dysentery.
40.	*Coccinia indica* W.	Cucurbitaceae	Kovai	Vine	Fruit	Diabetes.	Fruit is consumed orally to cure disease.
41.	*Trainthema portulacastrum*, L.	Aizoaceae	Soaranai	Herb	Stem, root	Rheumatism.	Stem and roots are crushed and the extract is used.
42.	*Centella asiatica* L	Apiaceae	Vallarai	Herb	Leaves	Wound.	Decoction applied topically along with coconut oil.
43.	*Adina cordifolia* Hook F	Rubiaceae	Manjal kadambai	Tree	Bark	Stomach-ache.	Fresh bark is ground with brown sugar and taken internally.
44.	*Morinda tinctoria* Roxb.	Rubiaceae	Nunamaram	Tree	Fruit	Diabetes, Cardiovascular Disease.	Fruit juice taken orally to cure Cardiovascular disease.
45.	*Randia dumetorum*, Lam.	Rubiaceae	Karamul	Shrub	Leaves, fruit, seeds	Wounds.	Dosage- therapeutic 1 grams For vomiting therapy – 3 – 6 g.
46.	*Rubia cordifolia* L.	Rubiaceae	Kalutharupan chedi	Climbing	Root	Wound.	Fresh roots or fresh tender shoot is made into paste is applied externally.
47.	*Spermacoce hispida*, L.	Rubiaceae	Nathaichuri	Herb	Seed	Stomach problems.	Seeds are crushed into paste and taken orally to treat stomach problem.
48.	*Eclipta prostrate* L	Asteraceae	Manjal Karisalangannai	Herb	Leaves, flowers	Jaundice.	Juice of leaves and flowers taken for 1 month.
49.	*Sphaeranthus indicus*, L.	Asteraceae	Kottai karantai	Herb	Leaf, Flower and seeds	Skin disease.	Leaf, Flower and seeds are used into paste,Seeds applied to treat skin disease.
50.	*Spilanthes acmella* Murr	Asteraceae	Manjal Poo chedi	Herb	Root, flower	Skin diseases.	Roots, flower made into paste to cure skin disease.
51.	*Vicoa indica* (L.) DC	Asteraceae	Jimikkipoo	Herb	Leaves	Indigestion and Dysentery.	Leaf is boiled in water and the decoction is administered orally.
52.	*Plumbago auriculata*, Lam.	Plumbaginaceae	Neela Kodiveli	Herb	Root	Touch the external part of the tumour, fever.	Roots used as toothpaste and for fever.
53.	*Plumbago zeylanica*, L.	Plumbaginaceae	Kodiveli	Herb	Root	Leprosy.	Root is made into paste with milk and salt is applied for leprosy.
54.	*Alstonia scholaris* R. Br.	Apocynaceae	Paalooram pattai	Tree	Stem	Lactation.	Powder of stem given orally to relax for lactation.
55.	*Carissa carandas* L.	Apocynaceae	Kalakka	Shrub	Leaves	Fever.	Decoction of leaves to use orally to cure fever.
56.	*Catharanthus roseus*G. Don.	Apocynaceae	Sudukadu mallikai	Herb	Root , leaves	Diabetes, Menorrhagia, pain, Anti cancer.	Leaves areUsed in diabetes for orally.Infusion of leaves used in menorrhagia, juice applied for relief of pain and also used as Anti cancer.
57.	*Nerium oleander* L.	Apocynaceae	Arali	Shrub	Stem, bark	Ear Achaea.	Juice prepared from the stem bark is boiled with gingelly oil.
58.	*Wrightia tinctoria* (Roxb.) R.Br	Apocynaceae	Vetpalai	Tree	Seeds	Indigestion.	Juice of seeds taken orally to increase digestion.
59.	*Calotrophis gigantea*,L.	Asclepiadaceae	Eruku	Shrubby	Root , bark	Elephantiasis	Paste of the root bark reduce, with sour conjee (Rice vinegar) is applied externally.
60.	*Gymnema sylvestre* R.Br	Asclepiadeace	Sirukurinji or Shakarai kolli	Twining shrub	Leaves	Diabetes.	Tender fresh leaves and dried powder are used to cure diabetes, Half teaspoon of the plant powder mixed with sugar is taken on empty stomach to treat diabetes, Cooked leaves may also be used in meals to treat diabetes.
61.	*Hemidesinus indicus*	Asclepiadaceae	Nannari	Twining	Whole plants	Body cool.	Root Juice extracted from the whole Plants is taken internally to keep the body cool.

	Hook f			shrub			
62.	*Pergularia daemia* Forsk.	Asclepiadaceae	Veliparuthy	Straggler	Leaves	Treatment of fever, asthma and snake bite.	The paste of the leaves with black pepper is applied on forehead for the relief of headache. The decoction of the leaves is used in treatment of asthma and snake bite.
63.	*Strychnos nuxvomica*, L.	Loganiaceae	Etti	Tree	Bark	Snake bite. Poison reliever.	The decrease in strychnine amount was best when the seeds were immersed for detoxification in excess of water for 5 days, in milk for 2 days followed by their boiling in milk.
64.	*Ipomea Staphylina*, R, & S.	Convolvulaceae	Oonankodi	Vine	Leaves	To cure blood clotting in joints.	Leave paste taken internally to cure diarrhoea.
65.	*Sesamum indicum*, L.	Pedaliaceae	Ellusedi	Herb	Seeds, leaves	Clear the clotting cells of wounds.	Seeds have been used as a medicine since antiquity.
66.	*Justicia adhotoda* L.	Acanthaceae	Adathoda	Shrub	Leaf	Diarrhea, Dysentery.	Leaf juice given orally to cure disease.
67.	*Lantana camera*, L	Verbinaceae	Unnisedi	Tree	Leaves	Wounds.	The juice of the leave mixed with cow's milk is used in snake bite and insect bites.
68.	*Phyla nodiflora* (L.) Greeme	Verbenaceae	Poduthalai	Herb	Leaves	Piles.	Leaves are made into chutney and eaten to cure.
69.	*Stachytarpheta indica*, Vahl.	Verbinaceae	Neringi	Herb	Leaves	Clear the dead cells of wounds, asthma and ulceratedstomachs.	The fresh leaves are consumed in bush tea as a "cooling" tonic and blood cleanser, to treat.
70.	*Vitex negundo*, L.	Verbenaceae	Notchi	Tree	Leaves	To cure Extra accumulation of water in body. asthmatic complaints	Leave juice is given to vermifugeflower powders with cow's milk are given in cholera and liver complaints.
71.	*Gmelina arborea*, Roxb.	Lamiaceae	Kumulu	Tree	Bark	Fever, snake bite.	Snake bite a decoction of the root and bark is given internally.
72.	*Gmelina asiatica*, L.	Lamiaceae	Mullu kumulu	Straggling shrub	Fruits	Wounds in heads.	Fruits used as substitute for soap.
73.	*Leucas aspera* (Willd) Link.	Lamiaceae	Thumbai	Herb	Leaves	Motion related problem.	Leave juice taken internally for asthma,Whole plant paste is applied externally for head ache.
74.	*Ocimum basilicum* L.	Lamiaceae	Puliyarai	Herb	Leaf	Pimples and acne.	Leaf paste applied on the skin to cure pimples and acne.
75.	*Plectranthus coleoides* Bent.	Lamiaceae	Omavalli chedi	Herb	Leaf	Skin disease and burns.	Leaf paste applied once in two days to cure skin disease.
76.	*Mirabalis jalapa*, L.	Nyctaginaceae	Andhi malli	Herb	Leaves	Tumours, jaundice, dysentery, diarrhoea and dyspepsia.	The leaves juice mixed with water which curestumours.
77.	*Aerva lanata*(L.) Juss.	Amaranthaceae	Siru peelai	Under shrub	Whole plant	Cough, score throat and wounds.	Juice of whole plant plants is taken orally to treat.
78.	*Amaranthus spinosus* L	Amaranthaceae	Mullu keerai	Herb	Leaves	Stomach ulcer.	Paste of leaves taken along with food to cure ulcer.
79.	*Piper nigrum* L.	Piperaceae	Milagu	Climber	Flower	Snake bite.	Flower paste with ghee,orally to cure snake bite.
80.	*Gyrocarpus americnus*, Jacq.	Hernandiaceae	Vellai thanukku	Tree	Bark,stem	Cure for toungue collaboration.	Tradionally Kimberley Aboriginal people *used* the light and easily worked wood.
81.	*Santalum album* L.	Santalaceae	Santhana maram	Tree	Shoot	Skin disease.	Shoot paste applied externally to cure skin disease.
82.	*Acalypha indica* L.	Euphorbiaceae	Kuppaimeni	Herb	Leaf	Insect bite, snake bite.	Leaf extract applied externally to treat snake bite.
83.	*Andrographus panniculata* Nees.	Euphorbiaceae	Nilavembu	Herb	Leaf	Hepatoprotective.	Juice of leaf taken orally to cure hepatoprotective.
84.	*Euphorbia antiquorum* L	Euphorbiaceae	Shadura kally	Tree	Leaf	Fever, Wound.	The stem is heated on fire and the juice thusobtained is topically applied.
85.	*Euphorbia heterophylla*, L.	Euphorbiaceae	Pall sedi	Shrub	Leaves	Indigestion, stop dysentery.	The aqueous extract of *Euphorbia heterophylla* at doses of 100, 200 and 300mg/kg orally relative to the control group.
86.	*Euphorbia nivulia* B.-Ham.	Euphorbiaceae	Ilai kalli	Tree	Latex	Removal of blood clotting.	Stem mixed with green ginger is given patients of dog bite.
87.	*Euphorbia tirucalli*, L.	Euphorbiaceae	Kodu kalli	Small tree	Leaves	Fever.	Decoction of the leaves to cure fever.
88.	*Phyllanthus amarus* Schuand Thonn.	Euphorbiaceae	Keelanelli	Herb	Leaves	Diabetes.	Leaves extract externally to cure diabetes.
89.	*Phyllanthus emblica L.*	Euphorbiaceae	Aranelli	Tree	Fruit	Snake bite.	Fruit juice orally to use snake bite.
90.	*Tragia involucrate*, L.	Euphorbiaceae	Kancharai kodi	Herb	Leaves	Jaundice, Diarrhoea.	Decoction of whole plant is given twice a day for 7 days to improve digestion and to cure constipation alternated.
91.	*Ficus resemosa* L	Moraceae	Atthi	Tree	Latex	Bone fractures, Urinary trouble.	Fruit juice is taken for bone fractures and urine trouble.
92.	*Alpinia calcarata* Rosc.	Zingiberaceae	Arathi poo	Herb	Rhizome	Growth.	Dried rhizome mixed with water and given orally to increase growth.
93.	*Costus speciosus*, Sm.	Zingiberaceae	Koshtam	Herb	Leaf	Wound.	Leaf of this plant is mixed with the leaves of Cynodon dactylon, Glycyrrhiza glabra,and Canna indica and stem bark of Punica granatum.The juice extracted from this mixture is appliedtopically on affected places to heal wounds.

94.	*Dioscorea oppositifolia* L	Dioscoreaceae	Valli kilangu	Climbing herb	Root	Stomach ulcer.	Root chewed to cure ulcer.
95.	*Asparagus racemosus* Willd	Liliaceae	Thanneervitan	Shrub	Root	Asthma, stomach ulcer.	Root powder mixed with taken internally for increasing lactation and uterine disorder .Young rhizome is consumed after cooking. Rhizome powder mixed with honey is given for a week to cure stomach ulcer
96.	*Gloriosa superb*, L.	Liliaceae	Kalappai kilangu or Kanvalipoo	Climbing	Tubers	After grind for the abortion.	Paste from tuber applied externally to reduce inflammation and also used for abortion. Seed are used for epilepsy. Decoction of the tuber is taken internally to treat aphrodisiac.
97.	*Acorus calamus* L.	Araceae	Vasambu	Shrub	Rhizome	Throat infection.	Dried rhizome is given orally to cure infection.
98.	*Bambusa arundinacea* (Retz.)willd.	Poaceae	Moongil	Tree	Leaves	Stomach problem.	Young shoots used as food, Stemis used to build huts and spiritual ceremonies.
99.	*Cynodan dactylon*, Pers.	Poaceae	Arugampul	Erect culms	Total plant	Cold.	Juice of this plant used for blood purification, Leaves juice is taken internally along with milk to cur bleeding piles. Branches dipped in hot oil are used for a heat-bath or body coolant
100.	*Saccharum officinarum* L.	Poaceae	Karumbu	Herb	Stem	Laxative and Diuretic.	Juice of stem taken orally to cure urinary problem.

Figure: 1

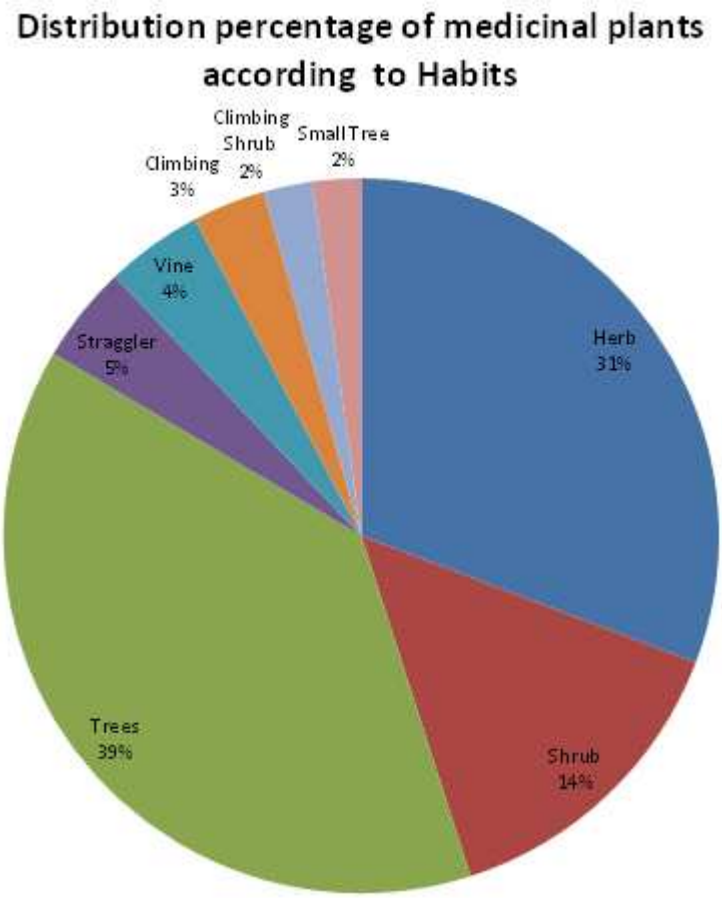


Figure -2

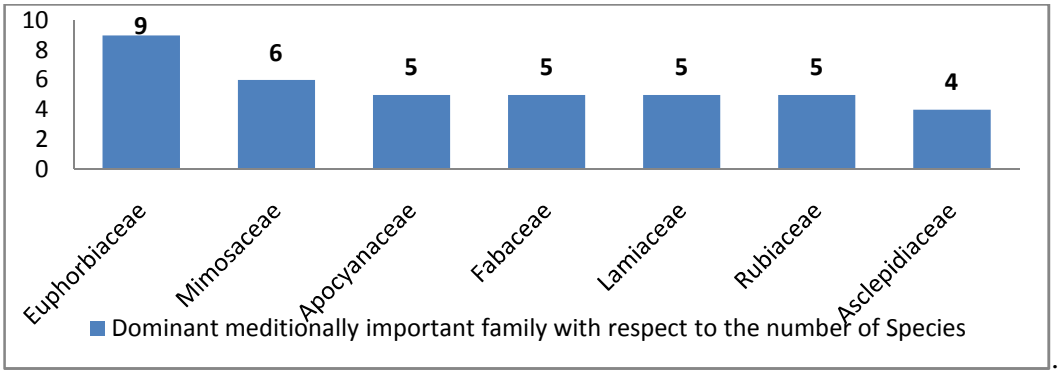


Figure -3

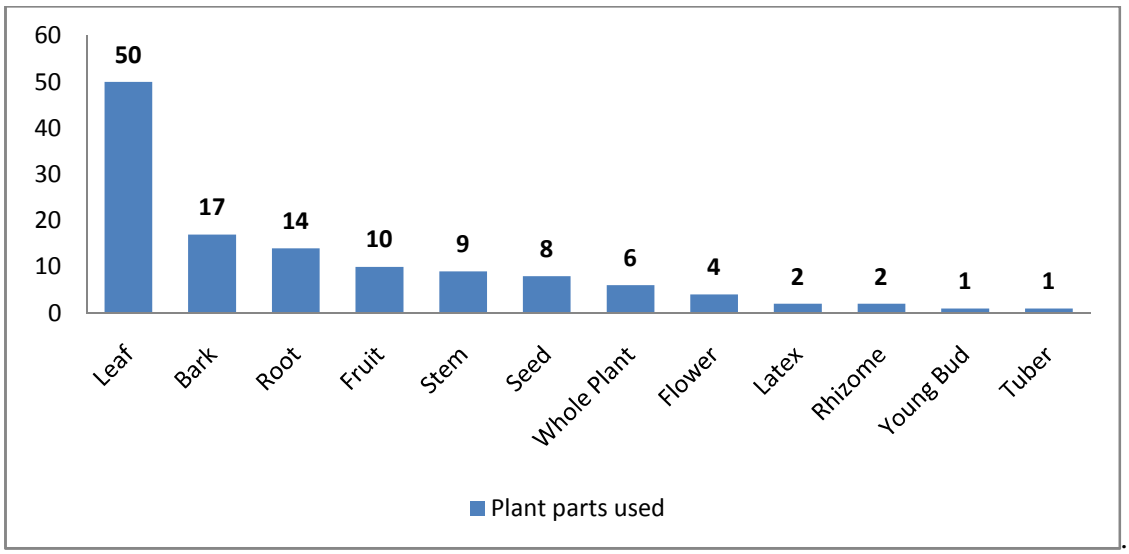
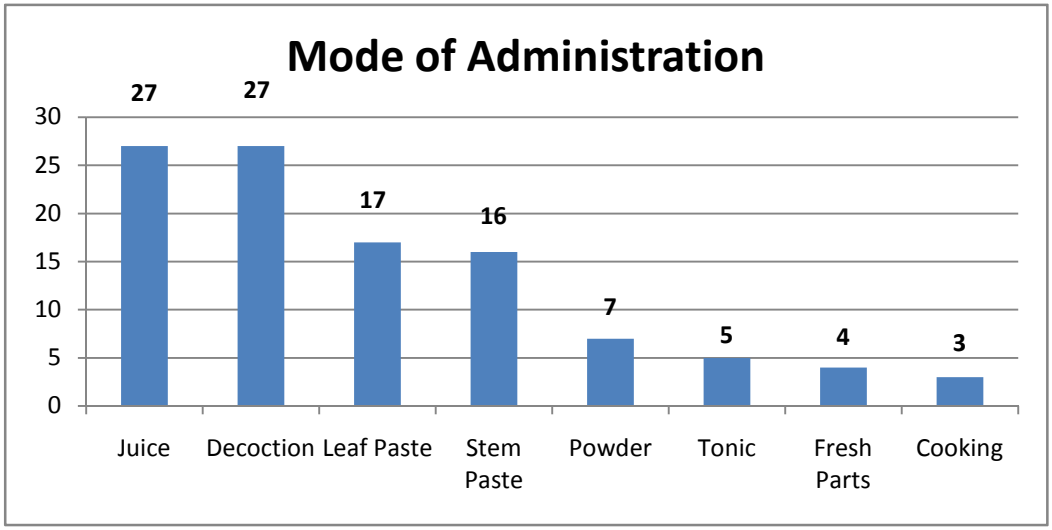


Figure -4



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 ethnobotany and taxonomic studies. This study offers a model for the relationship between plants and people, within the context of traditional remedies obviously ensure therapeutical efficacy. The value of using ethno botanical information is to initiate drug discovery efforts. This study also gathered a broad spectrum of information concerning medicinal plants used by tribals. Due to lack of interest among the younger generation of tribal's as well as their tendency to migrate to cities for lucrative jobs, we face the possibility of losing this wealth of knowledge in their near future.

Acknowledgement
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