



Medicinal Plants of Siddha System of Medicine and their Diversity Status in Southern Western Ghats of Coimbatore District, Tamil Nadu, India

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Abstract: The Siddha system of medicine is an ancient system of medicine which is practiced in Tamil Nadu and Tamil speaking region of the world. The system mainly focused on addressing the root cause of the diseases rather than treating the symptoms of diseases, in which the combination of herbs, medicinal plants animal and marine resources are used in the drug formulations. A survey was conducted to study the diversity status of medicinal plants used in Siddha system of medicine in the Western Ghats region of Coimbatore District, Tamil Nadu. The present paper deals with the 180 medicinal plants belonging to 165 essential genera and 73 families. Further the extensive field studies are essential to discover new drug for the betterment of health care needs.

Introduction

India is endorsed with rich wealth or medicinal plants which are widely used by all sections or peoples either directly as folk remedies or different indigenous system of medicine or indirectly in the pharmaceutical preparations or modern medicine. About 427 ethnic communities and folk healers use around 8000 species of medicinal plants in different parts of India (Savarimuthu *et al.*, 2006). During the last few decades there has been an increasing interest in the study of medicinal plants and their traditional use in different part of the world (Pei Sheng, 2001). An ethno botanical study indicates that about 8000 medicinal plants, which are used by many tribal communities for traditional medicinal preparations (Sukumaran and Raj, 2010). Ethno medicine is one of the systems of medicine that is widely practiced among the tribal and aboriginal populations of our

country for the treatment of various ailments (Singh *et al.*, 2013).

In developing countries there is an increasing attempts to incorporate traditional medicines especially herbal preparations in the local health care systems and many modern researchers involved today to explore the huge potential of ethno biological knowledge for treating various diseases (Dutta and Dutta, 2005; Jain *et al.*, 2010; Jayaprakash, 2011). In the beginning of the nineteenth century some of the available contributions on the medicinal plants of the country by popularizing monograph under the title of a catalogue of Indian medicinal plants and drugs with their names in Hindustani and Sanskrit (Ved Prakash and Malhotra, 1987). The curative properties of some herbs were documented in Rig-Veda, Athurvanaveda, Upanishads, Mahabharata and Puranas written between 4500-1600 BC (Jain, 1994). In Athurvanaveda wherein the medico-religious aspects and utilization of medicinal herbs were recorded.

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Later eight revisions of Ayurveda written probably between 2500 and 900 BC were the real foundation of ancient medicine. Detailed accounts of medicinal plants are also found in Chikitsa Sthanam of Sushrut Samhita written between 600 BC and 300 AD (Bishagranta, 1907-1916, Jain, 1996; Jain and Sikarwar, 1997).

The Siddha system of medicine is an ancient system of medicine which is practiced in Tamil Nadu. Some of important medicinal plant species are *Acacia sinuata* (Lour.) Merr.(Sehakai), *Acalypha indica* L. (Kuppaimeni), *Achyranthes aspera* L. (Nayuruvi), *Aerva lanata* (L.) A. L. Juss. (Siru Poolai), *Albizia lebbeck* (L.)Willd.(Vagai), *Aloe vera* (L.) Burm.f. (Katrashai), *Argemone mexicana* L. (Brammadani), *Artemisia nilagirica* (Clarke) Pamp. (Masipathri), *Atalantia monophylla* (L.)Correa (Kattu elumichai), *Bauhinia purpurea* L. (Mantharai), *Calotropis gigantea* (L.)R.Br. ex Ait. (Errukku), *Capparis zeylanica* L. (Athondai.), *Carissa carandas* L. (Kilakai), *Caryota urens* L. (Koonthalpanai), *Cassia auriculata* L. (Avaram), *Cassia fistula* L. (Kontrai), *Coccinia grandis* (L.) J. Voigt (Kovai), *Coldenia procumbens* L. (Serupadai), *Cynodon dactylon* (L.) Pers., (Arugampul), *Erythrina variegata* L. (Kayanamurungai), *Gloriosa superba* L. (Senkanthal), *Hemidesmus indicus* (L.) R.Br. (Nannari), *Hybanthus enneaspermus* (L.) F.V. Muell. (Orithalthamarai), *Hydnocarpus laurifolia* (Dennst.)Sleum. (Maravetti), *Ricinus communis* L. (Amanakkau), *Strychnos nuxvomica* L. (Ettiai), *Euphorbia hirta*, *Helictres isora*, *Hemidesmus indicus*, *Murraya konigii*, *Syzygium cumini* and *Tinospora cordifolia* which are used in the siddha system of medicine (Nadkarni, 1976) These are also used by the tribes of the study area. The Siddha system is effective in treating chronic diseases of liver, skin diseases especially psoriasis, rheumatic problems, anaemia, prostate enlargement, bleeding piles and peptic ulcer etc. (Anon., 2001).

The Government of India has framed different councils such as Central Council for Research in Ayurveda (CCRAS), Central Council for Research in Siddha (CCRS), Central Council for Research in Unani Medicine (CCRUM) and Central Council for Research in Homoeopathy (CCRH) under the ministry of AYUSH to carry out the clinical research in different ailments and to provide health care needs to the people through the indigenous system of medicine. Many of the plants that are used by the indigenous people, which are mentioned in the ancient medicinal literature. Moreover these are also used in different system of medicine such as Ayurveda, Siddha, Unani and Homoeopathy.

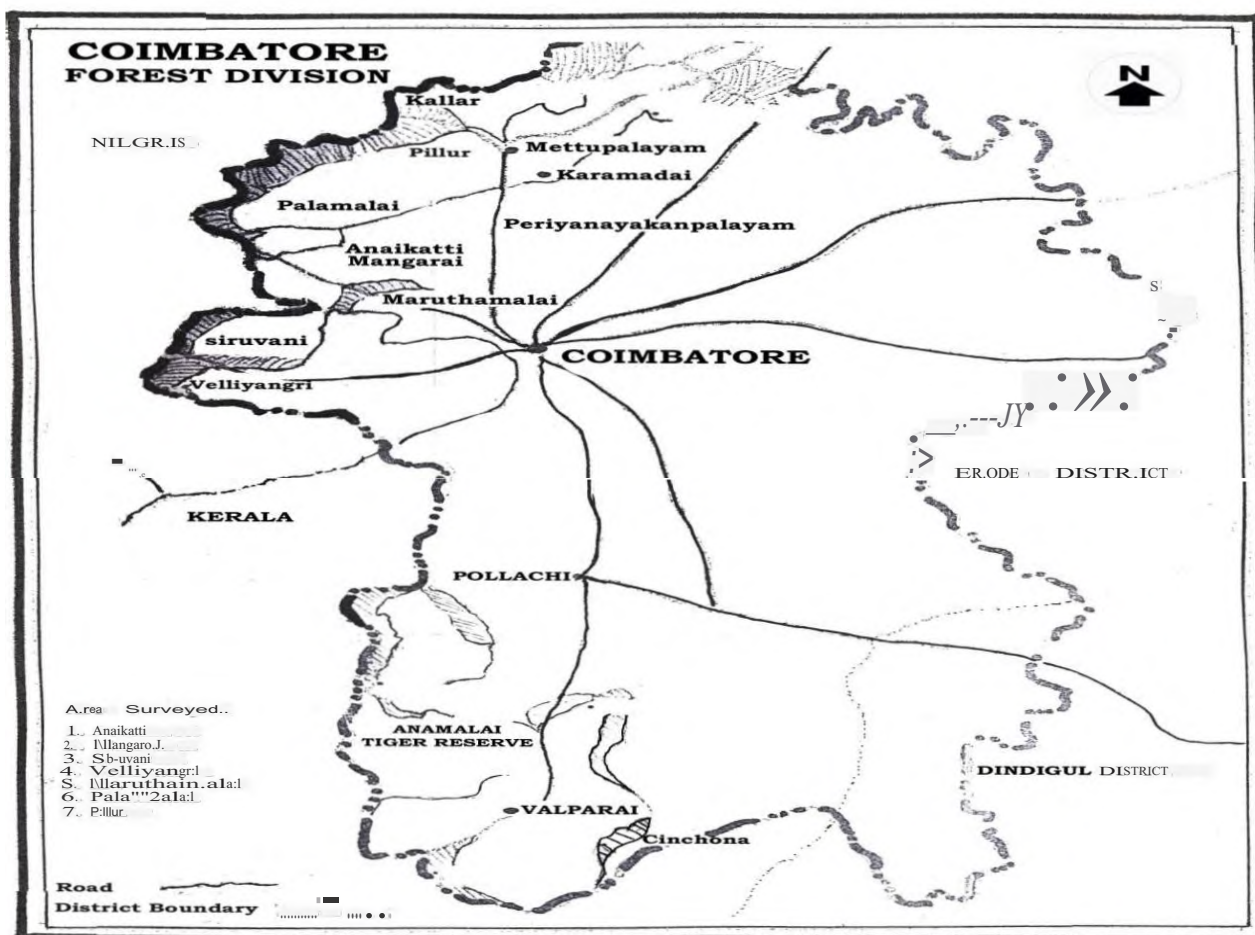
Study Area

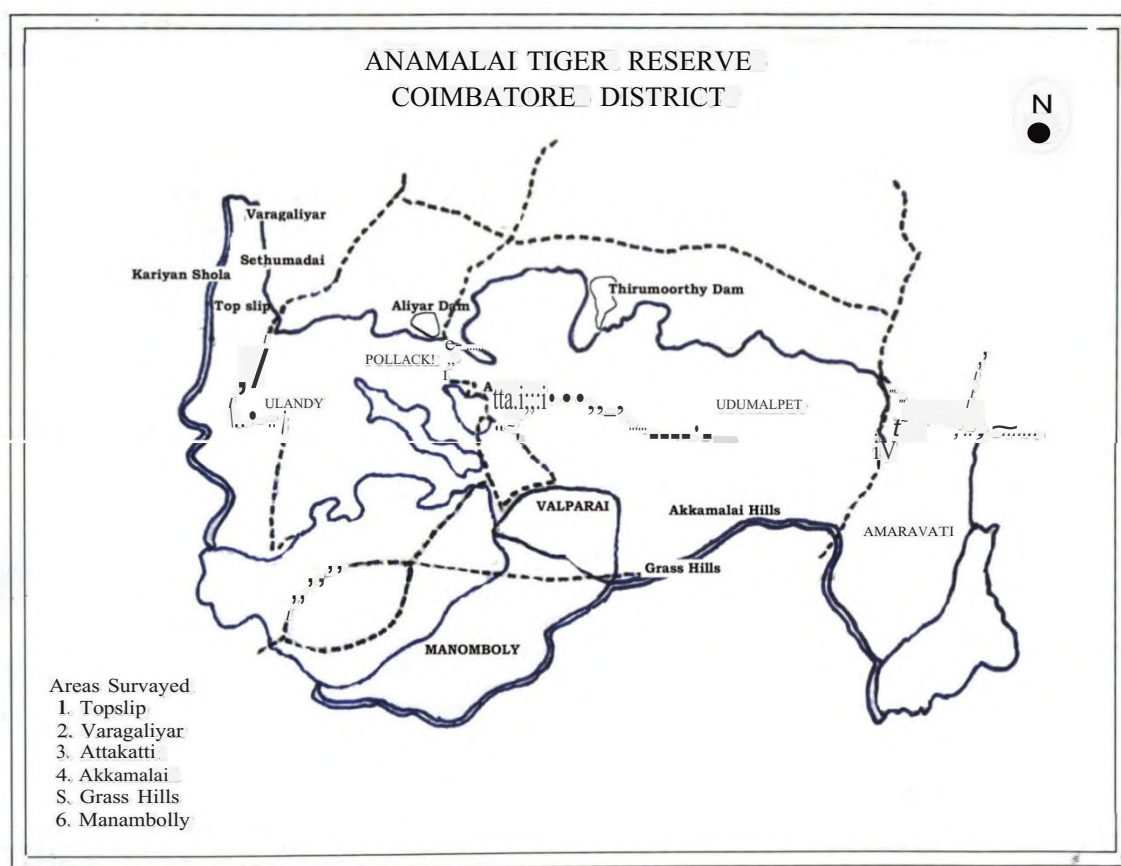
Coimbatore is located at the foot hills of the Nilgiri hills in Western Tamil Nadu between 10°55' and 11°10' North and 76°10' East longitude. The forest areas such as Mangarai, Anaikatti (North and South Coimbatore Range), Siruvani hills and Sholakarai forest areas in Boluvampatti range, Mulli, Pillur and Manar hills in the Karamadai range and Gopanari and Anaikatti forest areas in the periyayanayakan palyam ranges are under taken for survey. Similarly in the Anamalai Tiger Reserve (Indira Gandhi Wild life sanctuary) falls in the Coimbatore district is also undertaken for survey. It is located mainly in the Valparai taluk and extending its portion to Pollachi and Udumalapet taluk of Coimbatore district. It lies in between latitude 10°54' North and 76°44' and 77°48' East longitudes. The forest areas such as Mulli, Pillur, Manar hills, Siruvani, Anaikatti, Gopanari in Coimbatore forest division and Varagaliar, Topslip, Akkamalai, Monombolly forest areas in Anamalai Tiger Reserve (Indira Gandhi Wildlife sanctuary) are demarcated zones for rich floristic diversity.

Forest Ranges and Areas Surveyed

Name of the forest division	Range	Forest areas
Coimbatore forest division	Coimbatore	Mangarai, Anaikatti (North & South)
	Boluvampatti	Siruvani and Sholakarai Hills
	Karamadai	Mulli, Pillur and Manar hills
	Periyanayakanpalayam	Gobanari, Anaikatti North & Central
Anamalai Tiger Reserve (Indira Gandhi Wildlife Sanctuary)	Ulandhy	Topslip, Varagaliyar forest areas
	Valparai	Akkamakai, Cinchona forest areas
	Manambolly	Manambolly forest areas

Map of the Study Area





Methodology

Extensive and intensive field trips were conducted in different seasons at Coimbatore forest division, and Anamalai Tiger Reserve (Indira Gandhi Wildlife Sanctuary) in Coimbatore district during the year 2010-2014. About 10 forest areas belong to 4 forest ranges in Coimbatore forest division and 6 forest areas of 3 forest ranges of Anamalai Tiger Reserve (Indira Gandhi Wildlife Sanctuary) of Coimbatore district were surveyed. The botanical identity of all the plant species are identified with the help of available floras and literature (Hooker, 1894; Gamble and Fischer, 1915-1936; Kritikar and Basu 1933-35; Nair and Henry 1983; Mathew, 1983; Nayar and Sastry, 1987-1990; Yoganarasimhan, 2000). The correct identity of all taxa was strictly regularized according to the International Code of Nomenclature for algae, fungi and plants (ICN). The collection of each plant specimens

in fresh condition are collected from the study area are also provided field numbers and the phenological datas such as habit, habitat, brief botanical description of each species were also noted in the field note book. The herbarium specimens were then confirmed by further critical study with the help of authentic specimens deposited in the Madras Herbarium (MH), Botanical Survey of India (BSI), Southern Circle, Coimbatore, Tamil Nadu. The vegetational types and many interesting plants were photographed, important observations and any other relevant field data were also noted in the field itself. All the specimens were processed as per the standard procedure (Santapau, 1955, Fosberg and Sachet, 1965; Jain and Rao, 1977). The voucher specimens were deposited in the Survey of Medicinal Plants Unit Herbaria, Regional Research Institute of Unani Medicine, Chennai, Tamil Nadu.

Results and Discussion

The present study resulted in the documentation of 180 medicinal plants belonging to 165 genera and 73 families were utilized in the Siddha system of medicine from the study area (Fig.1). This indigenous system is mostly practiced in state of Tamil Nadu. The Siddha system of medicine is an ancient system of medicine which is practiced in Tamil Nadu and Tamil speaking region of the world. This system mainly focused on addressing the root cause of the diseases rather than treating the symptoms of diseases. The combination of herbs, medicinal plants animal and marine resources are used in the drug formulations (Lalitha, 2013). The detailed uses of all these plants were also given in tabular format (Table -1).

Similarly some of the related studies have been carried out and reported that the potential medicinal plants like *Cinnamomum verum* Presl (Bark), *Coccinia grandis* (L.) J. Voigt, (Leaf), *Curcuma longa* L. (Root), *Phyllanthus emblica* L., (Fruit), *Heliotropium indicum* L., (Leaf), *Momordica charantia* L., (Fruit), *Moringa pterygosperma* Gaertn., (Leaf), *Murraya koenigii* (L.) Spreng., (Leaf), *Punica granatum* L., (Leaf), *Terminalia bellirica* (Gaertn.) Roxb., (Fruit),

Terminalia chebula Retz. (Fruit) are used in anti-ulcer treatment (Sadacharam *et al.*, 2013). Similar studies also reported that, the plant species like *Acalypha indica* L., (leaf, root and flower), *Boerhavia diffusa* L. (Root), *Caesalpinia crista* L. (Seed), *Calotropis gigantea* (L.) R. Br., *Euphorbia hirta* L. (Whole Plant), *Justicia adhatoda* Medick. (Leaf), *Ocimum tenuifolium* L., (Leaf), *Piper nigrum* L. (Fruit), *Solanum nigrum* L. (Leaf, fruit), *Solanum trilobatum* L. (Whole plant), *Solanum surattense* Burm.f.(Fruit), *Terminalia bellirica* (Gaertn.) Roxb., (Fruit) and *Tylophora indica* (Burm.f.) Merr., (Root, leaf) are used in the treatment of anti-respiratory diseases (Arjun *et al.*, 2009).

The life form analysis of the present results reveals that, 80 species are herbs, 65 species are trees, 22 species are climbers, twiners and creepers and 13 species are shrubs (Fig. 2). Similarly Fabaceae is the largest family with 11 species followed by Caesalpiniaceae with 10 species, Malvaceae with 9 species, Euphorbiaceae and Solanaceae with 8 species, Acanthaceae, Lamiaceae and Rubiaceae are having 5 species respectively. Similarly other families are distributed each with 4, 3, 2 or 1 species respectively.

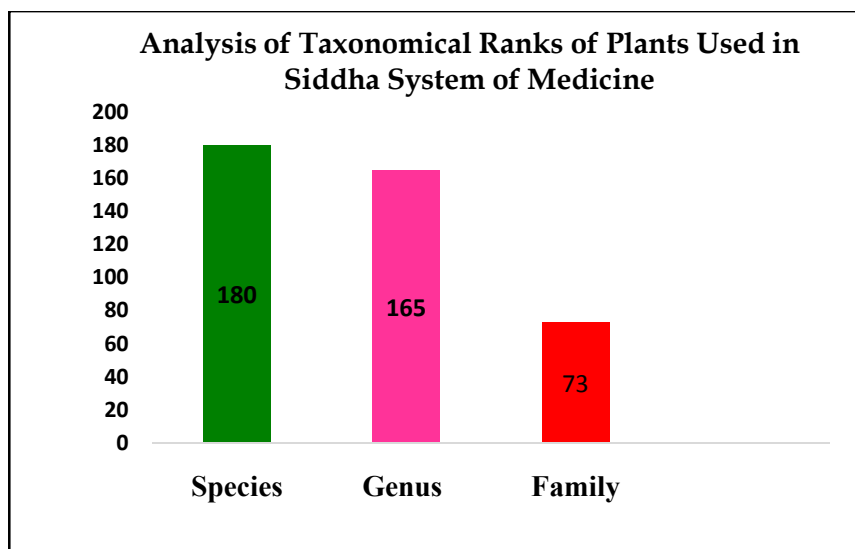


Fig.1. Taxonomical ranks of Siddha medicinal plants with respect to number of species in the study area

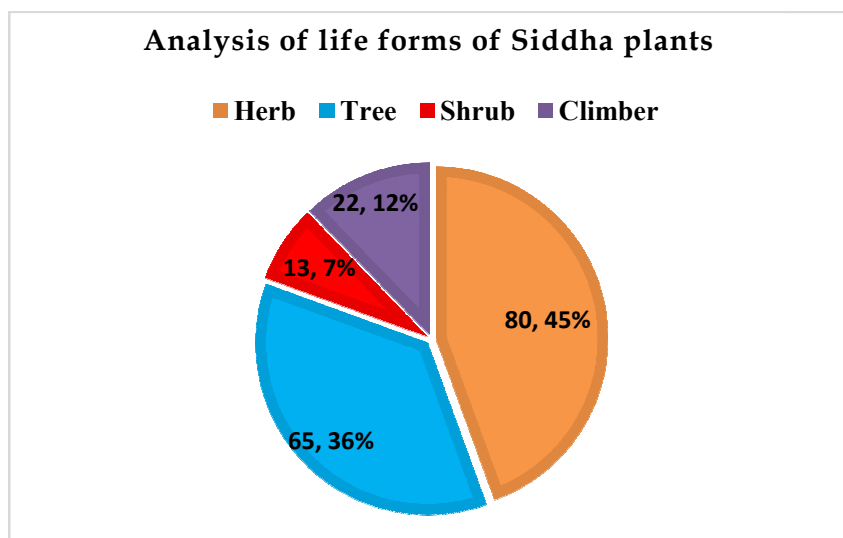


Fig.2. Analysis of Life forms of medicinal plants with respect to the number of species

More over the diversity analysis of medicinal plants used in the Siddha system of medicine resulted that, 148 plant species are common, 15 plant species are sporadic and 7 species are in vulnerable, 9 species are in rare and 1 species are in endangered distribution category. Besides, the study also revealed that 6 species are endemic to Southern Western Ghats of the Coimbatore district, Tamil Nadu (**Fig.3**). In addition to these, the species like *Alpinia galanga* Sw., *Annona squamosa* L., *Anacardium*

occidentale L., *Artocarpus heterophyllus* Lam., *Brassica juncea* L., *Carica papaya* L., *Coffea arabica* L., *Citrus limon*(L.) Burm.f., *Curcuma longa* L., *Gossypium herbaceum* L., *Lablab purpureus* (L.) Sweet, *Mangifera indica* L., *Momordica charantia* L. *Moringa pterigosperma* Gaertn., *Phyllanthus emblica* L., *Piper nigrum* L., *Psidium guajava* L., *Solanum nigrum* L., *Ricinus communis* L. *Solanum nigrum* L. and *Tamarindus indica* L., are found to be cultivate in some parts of the study area.

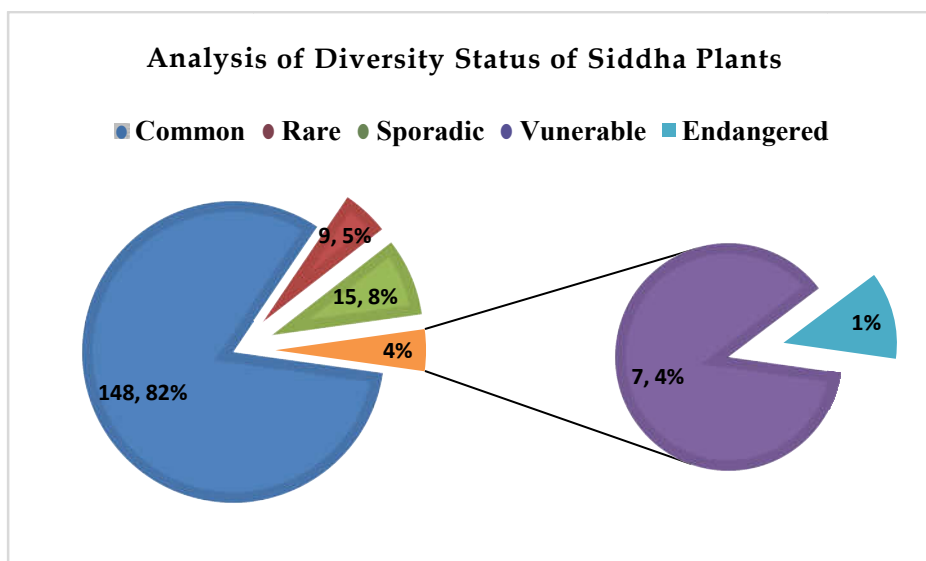


Fig.3. Analysis of diversity status of medicinal plants with respect to the number of species

Conclusion

The increasing requirement and high demand of herbal drugs used by the pharmaceuticals are lead to deplete the natural plant resources. In this current scenario, an urgent attention is needed to document the available potential medicinal plants in different parts of our country. The herbal medicines are even today plays an important role in the indigenous medicinal systems. Many of the potential medicinal plants are under threat to become rare and endangered due to various external

factors like habitat destructions, deforestations, anthropogenic activities, urbanization and over exploitation of medicinal plants. The conservation and propagation activities are to be taken up seriously with modern agronomical techniques. The medicinal plants are of our national heritage and these can be sheltered from the path of depletion and also protect such valuable species for future generation.



Fig. 1. Important medicinal plants used in Siddha system of medicine

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|----|--|----|--|
| a. | <i>Aegle marmelos</i> (L.) Correa | k. | <i>Caesalpinia crista</i> L. |
| b. | <i>Abrus precatorius</i> L. | l. | <i>Plumbago zeylanica</i> L. |
| c. | <i>Gymnema sylvestre</i> (Retz.) R.Br. ex Schu | m. | <i>Andrographis paniculata</i> (B.f.) Wall.ex Nees |
| d. | <i>Croton tiglium</i> L. | n. | <i>Mucuna Pruriens</i> (L.) DC. |
| e. | <i>Gnetum scandens</i> Roxb. | o. | <i>Asparagus racemosus</i> Willd. |
| f. | <i>Limonia acidissima</i> L. | p. | <i>Aristolochia indica</i> L. |
| g. | <i>Ophiorrhiza mungos</i> L. | q. | <i>Gloriosa superb</i> L. |
| h. | <i>Solanum surrattense</i> Burm. f. | r. | <i>Butea monosperma</i> (Lam.) Taub. |
| i. | <i>Gmelina asiatica</i> L. | s. | <i>Clerodendrum serratum</i> (L.) Moon |
| j. | <i>Strychnos nux-vomica</i> L. | t. | <i>Helicteres isora</i> L. |



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concern Forest Range Officers and field staff of the Coimbatore forest division and Anamalai Tiger Reserve, Coimbatore District, Tamil Nadu for necessary guidance during the field study.

Table-1. Siddha Medicinal Plants of Southern Western Ghats of Coimbatore District, Tamil Nadu

Sl No	Botanical Name	Siddha Name	Part Used	Curative Diseases
1	<i>Abrus precatorius</i> L.	Kundrimani	Root Leaf Seed	Eye diseases, diseases of pittam and kapham jaundice, fainting, arthritis and leucoderma.
2	<i>Abutilon indicum</i> (L.) Sweet.	Thutthi	Root Leaf Flower	Piles, ulcers, hematemesis, cough, leprosy, leucorrhoea, jaundice, and aphrodisiac.
3	<i>Acacia nilotica</i> (L.) Willd. ex Del.	Karuvalam	Root Leaf Bark Seed Gum	Ulcer, cough, dental diseases, dysentery, polyuria, diseases of pittam and drug reactions.
4	<i>Acacia sinuata</i> (Lour.) Merr.	Sihakai	Leaf Fruit	Constipation, jaundice, fever, ulcers, emetic and purgative.
5	<i>Acalypha indica</i> L.	Kuppaimeni	Root Leaf Whole plant	Worm infestation, gingivitis, burns, piles, cough, constipation, skin diseases, ear diseases, urinary diseases.
6	<i>Achyranthes aspera</i> L.	Nayuruvi	Whole plant	Diarrhoea, diseases of kapham, anaemia, jaundice, amenorrhoea, piles and abdominal disorders.
7	<i>Acorus calamus</i> L.	Vasambu	Rhizome	Dyspepsia, cold, bronchitis, fever, skin diseases, expectorant.
8	<i>Aegle marmelos</i> (L.) Correa	Vilvam	Root Bark Leaf Flower Fruit Resin	Venereal diseases, digestive, abdominal disorders eye diseases, vomiting, dysentery, piles and aphrodisiac.
9	<i>Aerva lanata</i> (L.) A. L. Juss.	Sirupeelai	Whole plant	Anaemia, urinary calculi, menorrhagia and dysuria.
10	<i>Alangium salvifolium</i> (L.f.) Wang.	Azhingil	Bark Seed	Diseases of vatam, kapham, skin diseases, poisoning, arthritis, urinary disorders.
11	<i>Albizia lebeck</i> (L.) Willd.	Vaagai	Root Bark Leaf Flower Resin	Stomatitis, diseases of kapham, leucorrhoea, bleeding piles, diarrhoea, dental diseases and leprosy.
12	<i>Aloe vera</i> (L.) Burm.f.	Kumari	Leaf juice Root	Leprosy, piles, mental disorders, fistula, stomach disorders, dysentery, diseases of pittam and eye diseases.
13	<i>Alpinia galanga</i> Sw.	Perarathai	Rhizome	Diseases of vatam and kapham, fever, ulcer, sinusitis.
14	<i>Alstonia scholaris</i> (L.) R.Br.	Ezhilaipalai	Root Bark	Pyrexia, dysentery, earache, diseases of vatam, skin eruption, skin diseases and abdominal disorders.
15	<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	Ponnankanni	Whole plant	Febrifuge, galactagogue.

16	<i>Amaranthus spinosus</i> L.	Mullukeerai	Root Leaf Whole plant	Snake bite, amenorrhoea, leucorrhoea
17	<i>Anacardium occidentale</i> L.	Mundiri	Root Bark Fruit Seed	Diabetes, ulcer, aphrodisiac and poisoning.
18	<i>Andrographis paniculata</i> (Burm. f.) Wall. ex Nees	Nilavembu	Whole plant Root	Liver disorders, worm infestations, blood disorders, malarial fever, skin diseases and general debility.
19	<i>Anisomeles malabarica</i> (L.) R. Br.	Perunthumbai	Leaf Whole plant	Digestive disorders, diarrhoea, eczema, fever, intermittent fever, cough, arthritis.
20	<i>Annona squamosa</i> L.	Seetha	Root Bark Fruit Seed	Fainting, epilepsy, worm infestation, constipation and diarrhoea.
21	<i>Argemone mexicana</i> L.	Kodiyotti	Root Seed Whole plant Latex	Leprosy, eczema, cough, leucorrhoea, dental diseases, eye diseases, constipation, anaemia and scorpion sting.
22	<i>Artemisia nilagirica</i> (Cl.) Pamp	Masipathri (Marikozhunthu)	Whole plant	Dysmenorrhoea, stomach disorders, dysuria, ulcer, anorexia, worm infestation, head ache and arthritis.
23	<i>Aristolochia indica</i> L.	Aadutheendapalai	Leaf Seed Root Whole plant	Intermittent fever, worm infestation, skin diseases, eczema, leprosy and gonorrhoea.
24	<i>Artocarpus heterophyllus</i> Lam.	Pala	Root Leaf Latex Fruit Seed	Liver disorders, indigestion, stomach ache, carminative, cough, wheezing used as rejuvenator.
25	<i>Asparagus racemosus</i> Willd.	Thannervittan	Root leaf	Diabetes, fever, cough, leucorrhoea, diseases of pitta, diarrhoea, skin disease and aphrodisiac.
26	<i>Atalantia monophylla</i> (L.) Correa	Perungurundu	Leaf fruit and seed	Pain, abdominal disorders, fever, cough, vomiting, indigestion and diseases of vatam.
27	<i>Azadirachta indica</i> A. Juss.	Vembu	Leaf Flower Fruit Seed	Worm infestation, leprosy, digestive disorders, fever, skin eruptions, jaundice, diseases of kapham, eye diseases, eczema, abdominal disorders, vomiting,
28	<i>Bacopa monnieri</i> (L.) Wettstein	Brahmiavzukkai	Whole plant	Dysuria, convulsion, cough, constipation, inflammation, diseases of pitta, venereal diseases and eye diseases.
29	<i>Barleria prionitis</i> L.	Semmulli (Mulliver)	Root	Diseases of Kapham, digestive diseases, fever, cough and dyspnoea.
30	<i>Bauhinia purpurea</i> L.	Mandharai	Root Bark Flower	Cough, constipation, haemorrhage, ulcer and gaiter.
31	<i>Bauhinia racemosa</i> Lam.	Mandharai	Root Bark Flower	Cough, constipation, ulcer haemorrhage, and gaiter.
32	<i>Boerhaavia diffusa</i> L.	Mukkirattai	Whole plant Root	Diseases of vatam and kapham, nasal disorders, constipation, arthritis, jaundice.
33	<i>Bombax ceiba</i> L.	Mulilavu	Root Bark Leaf Flower Seed Gum	Constipation, urinary disorders, leucorrhoea, diarrhoea, polyuria, menorrhagia and dysuria.
34	<i>Brassica juncea</i> (L.) Czern. & Coss.	Kadugu	Seed	Urticaria, diarrhoea, arthritis, hiccup and emetic.
35	<i>Buchanania lanzan</i>	Kattuma	Root Bark	Diarrhoea, general debility,



	Spreng.		Fruit Seed Kernel Oil Resin	dysmenorrhoea, leucorrhoea, colic and poisoning.
36	<i>Butea monosperma</i> (Lam.) Taub.	Palasu	Bark Leaf Flowers Resin	Worm infestation, diarrhoea, dysuria, skin diseases, abdominal diseases, eczema, cough, dropsy, dysentery, hematemesis, and contraceptive.
37	<i>Calophyllum inophyllum</i> L.	Punnai	Bark Fruit Seed	Astringent, internal haemorrhage and dysuria.
38	<i>Caesalpinia crista</i> L.	Kazharchikodi	Root Leaf Fruit	Hydrocele, neuralgia, annuresis, urinary calculi and abdominal disorders.
39	<i>Calotropis gigantea</i> (L.) R. Br. ex Ait.	Erukku	Root Bark Leaf Flower Latex	Diseases of vatam and kapham, snake and rate bite, leprosy, swellings in joints, worm infestations, skin diseases.
40	<i>Canna indica</i> L.	Kalvazhai	Rhizome Seed	Fever, anaemia, ulcer, and ear ache.
41	<i>Capparis zeylanica</i> L.	Aathondai	Root Leaf Fruit	Diseases of head, sinusitis, vomiting, cough, diseases of vattam and kapham.
42	<i>Cardiospermum halicacabum</i> L.	Mudakkaruthan	Root Leaf	Tumours, dermal disorders and used as laxatives.
43	<i>Carica papaya</i> L.	Pappai	Fruit Seed Latex	Worm infestation, gastritis, dermatitis, splenomegaly and indigestion.
44	<i>Carissa carandas</i> L.	Kalakai	Root Flower Fruit	Eye diseases, hypertension and indigestion.
45	<i>Carmona retusa</i> (Vahl.) Masamine	Kuruvichci	Whole plant	Leprosy, sterility, diarrhoea, skin diseases, digestive disorders and astringent.
46	<i>Caryota urens</i> L.	Konthalpanai	Leaf Bud Seed Toddy	Diarrhoea, migraine and scorpion sting.
47	<i>Cassia alata</i> L.	Vandukolli	Root Leaf Flower	Skin diseases used as purgative.
48	<i>Cassia auriculata</i> L.	Aavarai	Root Leaf Flower Seed	Diabetes, urinary disorders, haematuria, diseases of pittam and eye diseases.
49	<i>Cassia fistula</i> L.	Sarakondrai	Root bark Stem bark Leaf	Constipation, skin diseases, venereal diseases, worm infestations, diabetes, leucorrhoea, anaemia, leprosy, jaundice, pain and indigestion.
50	<i>Cassia occidentalis</i> L.	Ponnavaarai	Root Leaf FlowerSeed	Constipation, diseases of vatam used as rejuvenator.
51	<i>Cassia tora</i> L.	Usithagarai	Root Leaf Seed	Venereal diseases, inflammations, glandular swellings, fever, skin diseases and urticarial.
52	<i>Catunaregam spinosa</i> (Thub.) Tiruv.	Marukaarai	Root Bark Fruit	Root, bark and fruit used in diseases of pittam and kapham, ascites, dysentery, eczema, digestive disorders amenorrhoea and emetic.
53	<i>Celastrus paniculatus</i> Willd.	Vaalluluvai	Leaf Seed oil	Diseases of kapham and vatam, diarrhoea, cough, constipation,

				menorrhagia and ulcers.
54	<i>Centella asiatica</i> (L.) Urban	Vallarai	Leaf	Digestive disorder, urinary diseases, cough, dyspnoea, fever, vomiting, mental retardation and fainting.
55	<i>Cinnamomum verum</i> J.S.Presl	Ilavangapattai Lavangapatri	Leaf Bark Flower Bud	Aromatic, stimulant, astringent, carminative, anti-phlegmatic and dropsy.
56	<i>Cissus quadrangularis</i> L.	Sathuraprandai	Whole plant Root	Piles, abdominal disorders, diarrhoea and diseases of kapham.
57	<i>Citrus limon</i> (L.) Burm.f.	Elumichai	Leaf Fruit	Nausea, vomiting, diseases of pittam, eye diseases, dysentery and used as rejuvenator.
58	<i>Cleome gynandra</i> L.	Nalvelai	Root Leaf Flower Seed	Indigestion, ear diseases, nasal disorders, skin eruptions, fever, worm infestations, abdominal disorders and coryza.
59	<i>Cleome viscosa</i> L.	Naivalai	Root Leaf Seed	Indigestion, ear diseases, nasal disorders, skin eruption, fever, worm infestation, abdominal disorders and coryza.
60	<i>Clerodendrum serratum</i> (L.) Moon	Chiruthekku	Root Leaf	Asthma, fever, dropsy, mental disorders and coryza.
61	<i>Clitoria ternatea</i> L.	Kakkanam	Root Leaf Seed	Leucorrhoea, diseases of head, fever, digestive disorders, oedema, polyuria, worm infestation and constipation.
62	<i>Coccinia grandis</i> (L.) J. Voigt	Kovai	Root Stem Leaf Fruit	Skin diseases.
63	<i>Coldenia procumbens</i> L.	Siriserupadai	Whole plant	Gonorrhoea, febrifuge, antipyretic and astringent.
64	<i>Coffea arabica</i> L.	Kappikottai	Seed	Stimulant, diuretic, anti-lithic and anti-soporific.
65	<i>Costus speciosus</i> (Koen.) J.E. Sm.	Kottam	Rhizome	Fever, diseases of vatam, piles, snake bite, rate bite, urinary diseases, eye diseases, mental disorders, skin diseases and diseases of head.
66	<i>Crotalaria verrucosa</i> L.	Kilukiluppai	Leaf	Skin disorders, vermicide, and anti-sialagogue.
67	<i>Croton tiglium</i> L.	Nervaalam	Root Seed	Emetic and purgative.
68	<i>Cuculigo orchoides</i> Gaertn.	Nilapanai	Root	Diabetes, leucoderma, pain, wasting diseases and aphrodisiac.
69	<i>Cucurbita maxima</i> Duch. ex Lam.	Sarkarai pusani	Fruit Seed	Diseases of pittam, poisoning and worm infestation.
70	<i>Curcuma longa</i> L.	Manjal	Rhizome	Vomiting, head ache, sinusitis, coryza, leucoderma, convulsion, swellings, ulcers, skin diseases, fever, jaundice and eye diseases.
71	<i>Cuscuta reflexa</i> Roxb.	Ammaiyarkoonthal	Whole plant	Stomach disorders, hair tonic, leucorrhoea, micturition and diseases of pittam.
72	<i>Cynodon dactylon</i> (L.) Pers.	Arugampul	Whole plant Root	Poisoning, hypertension, eye diseases, skin diseases and diseases of pittam.
73	<i>Datura metel</i> L.	Umathai	Leaf Flower Fruit Seed	Wounds, ulcer, abscess, guinea worm diseases, skin diseases, leprosy, eczema,



				dyspnoea, cough, diarrhoea and fever.
74	<i>Delonix regia</i> (L.) Gamble	Vatanarayanan	Leaf	Diseases of vatam, constipation, inflammation, arthritis, hemiplegia.
75	<i>Desmodium gangeticum</i> (L.) DC.	Sirupulladi	Whole plant	Digestive disorders, diseases of pittam and galactagogue.
76	<i>Dioscorea bulbifera</i> L.	Kaivalli kodi	Tuber Fruit Whole plant	Fever, dysentery, diarrhoea and piles.
77	<i>Dodonaea viscosa</i> (L.) Jacq.	Virali	Bark Leaf	Inflammation
78	<i>Eclipta prostrata</i> (L.) Mant.	Karisalankanni	Whole plant	Jaundice, skin diseases, inflammations, anaemia, dental diseases, cough and ear and eye diseases, dropsy, diseases of leaver and spleen, coryza, hair falling and used as rejuvenator.
79	<i>Elaeocarpus serratus</i> L.	Rudraksham	Leaf Seed	Hiccup, giddiness, expectorant, biliousness.
80	<i>Embelia ribes</i> Burm.f.	Vaivilangam	Fruit Seed	Anaemia abdominal disorders, obesity, diseases of vatam, snake bite, and rate poisoning.
81	<i>Erythrina variegata</i> L.	Kalyanamurungai	Bark Leaf Flower Seed	Vomiting, abdominal disorders, fever, stomatitis, dysentery, worm infestation, arthritis, eye diseases, diabetes and sterility.
82	<i>Euphorbia hirta</i> L.	Ammanpacharisi	Whole plant	Leucorrhoea, constipation, urinary disorders, polyuria, aphrodisiac and asthma.
83	<i>Evolvulus alsinoides</i> L.	Vishnukirandi (Vishnukaranthai)	Whole plant	Fever, cough, diseases of vatam, amenorrhoea and diarrhoea.
84	<i>Ficus benghalensis</i> L.	Alamaram	Bark Leaf Fruit Flower Seed Latex	Polyuria, diarrhoea, leucorrhoea, dental and gum disorders, poisoning and aphrodisiac.
85	<i>Ficus hispida</i> L. f.	Peiathi	Bark Fig Seed Latex	Ulcer, skin diseases, leprosy, intermittent fever, fissures, fainting and galactagogue.
86	<i>Ficus racemosa</i> L.	Atthi	Bark Fig Latex	Constipation, anaemia and dysentery.
87	<i>Ficus religiosa</i> L.	Arasamaram	Root Bark Leaf Seed	Ulcers, diseases of pittam, constipation, cough, dyspnoea, leucorrhoea and aphrodisiac.
88	<i>Garcinia gummi-gutta</i> (L.) Robs.	Korukkapuli	Fruit	Carminative and digestive.
89	<i>Gloriosa superba</i> L.	Kaanthal Kizhangu (Kalappai Kizhangu)	Tuber	Snake bite, leucorrhoea, piles, worm infestation, diseases of vatam and skin diseases.
90	<i>Gmelina arborea</i> Roxb.	Perungumizh	Fruit	Diabetes, leucorrhoea, fever, fainting, diseases of pittam and vatam.
91	<i>Gmelina asiatica</i> L.	Nilakumizh	Root Leaf	Diarrhoea, piles, burning sensation and used as rejuvenator.
92	<i>Gossypium herbaceum</i> L.	Seemaparuthi	Leaf Flower Seed Bark	Leucorrhoea, ulcers, swellings, piles, cut injuries and aphrodisiac.

			Root	
93	<i>Gymnema sylvestre</i> (Retz.) R.Br. ex Schu.	Sirukurinjan	Root Leaf	Fever, urticarial, thirst, polyuria, stomatitis, cough, dyspnoea, snake bite, diseases of kapham.
94	<i>Helicteres isora</i> L.	Valamburikai	Fruit	Eye and ear diseases, diseases of kapham, hiccup, venereal diseases and eczema.
95	<i>Heliotropium indicum</i> L.	Thelkoduksu	Whole plant	Ulcer, eczema, digestive disorders, diseases of pittam.
96	<i>Hemidemus indicus</i> (L.) Schult.	Nannari	Root Leaf Flower Whole plant	Diseases of pittam and vatam, urticarial, diabetes, glandular swellings, fever, thirst, dysuria, urinary diseases and aphrodisiac.
97	<i>Hibiscus cannabinus</i> L.	Pulichai	Whole plant	Stomach disorders.
98	<i>Hibiscus rosa-sinensis</i> L.	Semparuthai	Root Leaf Flower	Leucorrhoea, menorrhagia, polyuria, hypertension, dysuria, cough, and diseases of pittam.
99	<i>Holoptelea integrifolia</i> (Roxb.) Planch.	Ayil (Aaya)	Bark	Diseases of vatam.
100	<i>Hydnocarpus laurifolia</i> (Dennst.) Sleumer	Neeradimuthu	Seed	Leprosy, tumours, skin diseases and fungal infections.
101	<i>Hygrophila auriculata</i> L.	Neermulli	FlowerSeed Whole plant	Anaemia, dropsy, oliguria, ascites, constipation, urinary calculi, piles and aphrodisiac.
102	<i>Hybanthus enneaspermus</i> (L.) F.v. Muell.	Oorilaithamarai	Whole plant	Polyuria, leucorrhoea, dysuria, coryza, sterility and aphrodisiac.
103	<i>Indigofera tinctoria</i> L.	Neeli	Root Leaf	Fever, jaundice, anaemia, arthritis, leucorrhoea and guinea worm diseases.
104	<i>Ipomoea nil</i> (L.) Roth	Jigiri vidai	Seed	Constipation.
105	<i>Jasminum auriculatum</i> Vahl.	Oosimalli	Flower	Digestive disorders, indigestion, fever, dropsy and venereal diseases.
106	<i>Jatropha curcas</i> L.	Kattamanakku	Root Leaf Seed Latex	Constipation, wounds, eczema, ulcer, piles, diseases of head, leucorrhoea, rate poison, abdominal disorders and aphrodisiac.
107	<i>Justicia adhatoda</i> Medick.	Adaathodai	Root Bark Leaf Flower	Cough, dyspnoea, fever, piles, tuberculosis, diseases of kapham.
108	<i>Lablab purpureus</i> (L.) Sweet	Avarai	Leaf Fruit	Chronic dysentery, cholera, ulcers and headache.
109	<i>Lawsonia inermis</i> L.	Nattu azhavanam (Marudonri)	Leaf Flower Seed Bark	Rheumatoid arthritis, head ache, ulcer used as refrigerant, soporific, deodorant, astringent and sedative.
110	<i>Leucas aspera</i> (Willd.) Link.	Thumbai	Leaf Flower	Fever, eye diseases, thirst, snake bite, nasal disorders, coryza, cough, leucorrhoea and venereal diseases.
111	<i>Limonia acidissima</i> L.	Villaa	Bark Fruit	Biliousness, astringent, stomachic, stimulant and carminative.
112	<i>Madhuca longifolia</i> (Koen.) Macbr.	Iluppai	Root Bark Flower	Fever, thirst, poisoning, eczema, ulcer and aphrodisiac.



			Fruit Seed oil	
113	<i>Mallptus phillippensis</i> (Lam.) Muell.	Kamela	Fruit	Skin diseases and worm infestations.
114	<i>Mangifera indica</i> L.	Maa	Root bark Stem bark Leaf Flower Fruit Seed Gum	Urinary dis orders, leucorrhoea, urticarial, thirst, diarrhoea and ulcer, menorrhagia and intermittent fever.
115	<i>Melia azedarach</i> L.	Malaivembu	Root Bark Leaf Gum	Worm infestation, amenorrhoea, sterility in female eczema and splenomegaly.
116	<i>Michelia champaca</i> L.	Shenbagam	Bark Flower Bud Flower and Seed	Cough, anorexia, dyspnoea, diseases of kapham skin diseases and urinary disorders.
117	<i>Mimosa pudica</i> L.	Thottal chunangi	Root Leaf	Diabetes, sinus, wounds, oedema and burning sensation.
118	<i>Mirabilis jalapa</i> L.	Andhimalli	Root Leaf	Piles, abscess, boils and ulcers.
119	<i>Momordica charantia</i> L.	Paggal	Leaf Fruit Seed	Intestinal worms, fever, leucorrhoea, cough, piles skin diseases, ulcer, hepatic and splenic disorders, jaundice, leprosy and diabetes.
120	<i>Moringa pterygosperma</i> Gaertn.	Murungai	Whole plant	Psychosis, unconsciousness, eye diseases, fever, poisoning, scrofula, skin diseases and aphrodisiac.
121	<i>Morinda pubescens</i> J.E.Sm.	Manjanathi (Nuna)	Root Leaf Fruit Bark	Eczema, fever, ulcer, glandular swellings, digestive disorders.
122	<i>Morus alba</i> L.	Kambilipoochi chedi	Leaf Fruit	Pyrexia, cough, laxative and throat disorders.
123	<i>Murraya koenigii</i> (L.) Spreng.	Kariveppalai	Root Bark Leaf	Dyspepsia, dysentery, chronic fever mental dis orders, nausea and vomiting.
124	<i>Nelumbium nucifera</i> Gaertn.	Thamarai	Tuber Flower Seed	Diseases of pittam, fever, thirst, diarrhoea, bleeding piles, cardiac diseases and aphrodisiac.
125	<i>Nerium oleander</i> L.	Alari (Arali)	Root Bark Flower	Skin diseases, glandular swellings and poisoning.
126	<i>Nyctanthes arbotristis</i> L.	Pavazhamalli	Root Leaf Seed	Fever, worm infestation, diseases of vatam, intermittent fever, scabies, skin diseases and constipation.
127	<i>Ocimum americanum</i> L.	Naithulasi	Leaf Seed	Fever, mental disorders, diseases of vatam and kapham, digestive disorders, cough, dyspnoea, leucorrhoea and ulcer.
128	<i>Ocimum basilicum</i> L.	Thirunuthpatchilai (Rudrajadai)	Whole plant Seed	Diuretic, carminative, gonorrhoea, dysentery, diarrhoea, earache stomach disorders and nasal disorders.
129	<i>Ocimum tenuifolium</i> L.	Thulasi	Leaf Seed	Fever, coryza, mental disorders, diseases of vatam and kapham, digestive disorders, cough, dyspnoea, leucorrhoea and ulcer.
130	<i>Ophiorrhiza mungos</i> L.	Keeripoondur	Leaf Root	Carminative, laxative, soporific, snake and dog bite poisoning and used as tonic.

131	<i>Oxalis corniculata</i> L.	Puliyarai	Leaf	Fever, head ache, abdominal disorders, venereal diseases, warts, digestive disorders.
132	<i>Pavetta indica</i> L.	Pavattai	Root Leaf Fruit	Tonic, purgative and diuretic.
133	<i>Pavonia odorata</i> Willd.	Peramutti	Whole plant	Rheumatic fever, indigestion, diseases of pittam, oliguria and cough.
134	<i>Pedaliium murex</i> L.	Yanai Nerunjil	Whole plant	Urinary disorder, leucoderma, urinary calculi, wasting diseases, diseases of pittam.
135	<i>Phyllanthus amarus</i> Schum. & Thonn	Keezhkainelli	Whole plant	Jaundice, diabetes, diseases of pittam, eye diseases, urinary disorders, skin diseases, menorrhagia, vomiting and diseases of head.
136	<i>Phyllanthus emblica</i> L.	Nelli	Root Bark Leaf Flower Fruit Seed	Pittam, coryza, vomiting, constipation, fainting, polyuria, anaemia, ascites, piles, dropsy, hypertension, wasting diseases, asthma, tuberculosis, rejuvenator
137	<i>Physalis minima</i> L.	Sodakkuthakkali	Whole plant	Diabetes, dysuria and swellings.
138	<i>Piper nigrum</i> L.	Milagu	Root Seed Whole plant	Fever, anaemia, cough, diarrhoea, abdominal disorders, piles, convulsion, polyuria, head ache, indigestion and jaundice.
139	<i>Plumbago zeylanica</i> L.	Venkoduveri	Root Leaf	Arthritis and facial paralysis.
140	<i>Pongamia pinnata</i> (L.) Pierre	Pungu	Root Leaf Flower Seed	Glandular swellings, eczema, ear diseases, diseases of vatam, fainting, abdominal disorders, snake bite, cough, skin eruption, venereal diseases and pain.
141	<i>Psidium gujava</i> L.	Koyya	Root Bark Leaf Fruit	Nausea.
142	<i>Pterocarpus marsupium</i> Roxb.	Vengai	Bark Leaf Gum	Dysentery, Leucorrhoea, cough, vomiting, dental diseases, diseases of vatam and skin diseases.
143	<i>Rhinacanthus naustus</i> (L.) Kurz	Naagamalli	Root Leaf	Skin diseases, snake bite, worm infestation and aphrodisiac.
144	<i>Ricinus communis</i> L.	Amanakku	Root Leaf Seed	Diseases of vatam, constipation, piles, jaundice, intercostal neuralgia, leucorrhoea and dysuria.
145	<i>Rubia cordifolia</i> L.	Manjitti	Root	Amenorrhoea, inflammations, wounds, burns and fractures.
146	<i>Ruta chalepensis</i> L.	Aruvada	Leaf	Eclampsia, dysmenorrhea, epilepsy, cough, dyspnoea, indigestion, fever and snake bite.
147	<i>Sapindus laurifolia</i> Vahl	Manipungu	Root Leaf	Diseases of kapham, fainting, inflammation, arthritis, amenorrhoea, epilepsy and snake bite.
148	<i>Santalum album</i> L.	Santhanam	Wood Oil	Thirst, veneral diseases, fever, skin eruption, herpes, dysentery, piles, diseases, of pittam and dropsy.
149	<i>Sesbania grandiflora</i>	Agathi	Root Bark	Food poisoning, diseases of pittam, worm



	(L.) Poir.		Leaf Flower	infestation, intermittent fever, sinusitis, head ache, eye diseases, chicken box and wasting diseases.
150	<i>Sida acuta</i> Burm.	Arivalmanaipoondur	Leaf Root	Diseases of vatam, fever, ear diseases, tuberculosis, diarrhoea, skin eruption, worm infestation and arthritis.
151	<i>Solanum nigrum</i> L.	Manithakkali	Whole plant Root	Expectorant, diuretic, carminative, hydragogue, cough, dyspnoea, tuberculosis, indigestion, fever and hysteria.
152	<i>Solanum surattense</i> Burm.f.	Kandankathiri	Whole plant Root	Expectorant, diuretic, carminative, hydragogue, cough, dyspnoea, tuberculosis, indigestion, fever and hysteria.
153	<i>Solanum torvum</i> Sw.	Sundaivartal	Root Fruit	Worm infestation and diarrhoea.
154	<i>Solanum trilobatum</i> L.	Thooduvalai	Whole plant	Bronchitis, respiratory disorders, carcinoma and aphrodisiac.
155	<i>Spermacoce hispida</i> L.	Nathaichuri	Root Seed	Dysentery, fever and coryza.
156	<i>Sphaeranthus indicus</i> L.	Kottaikaranthai	Root Leaf Flower Seed	Skin diseases, diseases of vatam, worm infestations, aphrodisiac and piles.
157	<i>Strychnos nuxvomica</i> L.	Yetti	Root bark Leaf Fruit Seed	Diseases of vatam, abscess, eczema, fainting, fever, dropsy, hemiplegia, leprosy, epilepsy.
158	<i>Symplocos racemosa</i> Roxb.	Vellilothiram pattai	Wood Bark	Tuberculosis, ascites, diarrhoea, dysentery, eye diseases, fever, ulcer, liver diseases, menorrhagia and amenorrhoea.
159	<i>Syzygium cumini</i> (L.) Skeels	Naaval	Whole plant	Cough, dyspnoea, menorrhagia, diseases of vatam, eczema, diabetes, diarrhoea, thirst antidote for strychnine poisoning.
160	<i>Tamarindus indica</i> L.	Puli	Bark Leaf Flower Fruit Seed	Ulcer, dropsy and anaemia.
161	<i>Tectona grandis</i> L.	Thekku	Wood Bark Flower Fruit Seed	Diseases of pittam, inflammatory, swellings, dyspnoea, skin diseases, ulcer and worm infestation.
162	<i>Tephrosia purpurea</i> (L.) Pers.	Kozhungi	Root and whole plant	Diseases of vatam, thirst, gingivitis, cough, dyspnoea, abdominal disorders, hepatomegaly and splenomegaly.
163	<i>Terminalia arjuna</i> (Roxb ex DC.) Wt. & Arn.	Marudu	Bark Leaf	Diabetes, leucorrhoea, cardiac diseases, leprosy, worm infestation, abdominal disorders, pain and ulcer.
164	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Thandrikai	Fruit Leaf Seed	Guinea worm diseases, leucorrhoea, venereal diseases, hypertension and dyspnoea.
165	<i>Terminalia chebula</i> Retz.	Kadukai	Fruit	Jaundice, obesity, polyuria, anorexia, cardiac diseases, haemorrhage, eye diseases, cough, dyspnoea, ascites, urinary disorders and used as rejuvenator.
166	<i>Thespesia</i>	Poovarasam	Root Bark	Leucorrhoea, stomach ache, viltiligo, skin

	<i>populnea</i> (L.) Sol.ex Correa		Flower Fruit Seed	disorders, depurative, tonic and inflammatory.
167	<i>Tinospora cordifolia</i> (Willd.) Miers.	Seendil	Root Stem Whole plant Leaf	Polyuria, fever, digestive disorders, diarrhoea, snake bite, diseases of pittam.
168	<i>Toddalia asiatica</i> (L.) Lam.	Milagaranai	Root Bark Leaf	Diseases of kapham and vatam, cough, dyspnoea, fever tuberculosis and bronchial asthma.
169	<i>Tribulus terrestris</i> L.	Nerunjil	Whole plant Fruit	Oliguria, fever, urinary calculi, diseases of vatam, leucorrhoea, thirst, retention of urine, aphrodisiac.
170	<i>Trichodesma indica</i> (L.) R.Br.	Kavil thumbai	Whole plant	Diseases of vatam, menorrhagia.
171	<i>Tylophora indica</i> (Burm.f.) Merr.	Najaruppan	Whole plant	Antidote, strychnine, arsenic, snake bite dyspnoea, asthma and food poisoning.
172	<i>Urena lobata</i> L.	Ottu thuththi	Leaf Flower Root Bark	Piles, wounds, vomiting, cough, aphrodisiac, pains, diseases of gum, diarrhea, leucorrhoea, worm infestation, thirst and oliguria.
173	<i>Vetiveria zizanioides</i> (L.) Nash	Vettiver	Root	Disease of pittam, thirst, jaundice, fever, head ache and burns.
174	<i>Vitex negundo</i> L.	Nochi	Root Bark Leaf Flower	Intermittent fever, coryza, worm infestation, ear diseases, cough.
175	<i>Withania somnifera</i> (L.) Dunal	Amukkara	Root Leaf Seed	Swellings, diseases of vatam, ulcer, diseases of nervous system and aphrodisiac.
176	<i>Wrightia tinctoria</i> (Roxb.) R. Br.	Vetpalai	Bark Leaf Seed	Diseases of pittam, and vatam, skin diseases, eczema, dysentery, psoriasis and venereal diseases.
177	<i>Xanthium indicum</i> Koen.	Marulumata	Seed	Venereal diseases.
178	<i>Ziziphus oenoplia</i> (L.) Mill.	Soorai	Fruit Seed	Fever, retention of urin, poisoning coryza, aphrodisiac and used as tonic.
179	<i>Zizyphus mauritiana</i> Lam.	Ilandai	Root Bark Leaf Fruit	Diarrhoea, dysentery, skin diseases, urinary disorders, indigestion, vomiting, Diseases of pittam and ulcers.
180	<i>Ziziphus rugosa</i> Lam.	Soorai	Fruit Seed	Fever, retention of urin, aphrodisiac and used as tonic.

References

Anonymous, (2001). *Annual Progress Report*, Department of AYUSH, Govt. of India, New Delhi.

Arjun, R., Duraisamy, M., Arul, J., Selvakumar. S., Balachandar, T., Vijay Pal, S. (2009). Medicinal plants, which are used in Siddha system of medicine for

treating Respiratory diseases. *Int. J. Phar. Ana.* **1(2):**20-30.

Bishagratna, K.K. (1907-1916). *An English translation of Sushruta Samhita*, Calcutta.

Dutta, B.K., Dutta, P.K. (2005). Potential of ethnobotanical studies in north east India. *An overview. Ind. J. Trad. Knowl.* **4:** 7-14.

- Fosberg, F.R., Sachet, M.H. (1965).** *Manual for Tropical Herbaria. Regnum Vegetabile. 39.* The Netherlands.
- Gamble, J.S., Fischer, C.E.C. (1915-1936).** *The Flora of Presidency of Madras.* Part 1- 11 (Part 1-7 by Gamble and 8- 11 by Fischer) Adlard and Sons Ltd., London. (Repr. ed. Vols. 1-3. 1957).
- Hooker, J.D. 1894.** *The Flora of British India.* VI. L. Reeve & Co. Ltd., NR. Ashford, Kent, England.
- Jain, S.K., (1996).** *Glimpses of Indian Ethnobotany,* Oxford & IBH Publishing Co. New Delhi, Bombay, Calcutta
- Jain, S.K., Rao, R.R. (1977).** *Handbook of Field and Herbarium Methods.* Today and Tomorrow Printers & Publishers, New Delhi. Hooker, J.D. (Ed.) 1897. *The Flora of British India.* 1-7. Reeve & Co., London.
- Jain, S.K., Sikarwar, R.L. (1997).** Prospective underutilized bio-resources clues from indigenous knowledge in Latin America. *J. Ind. Bit. Soc.* 76: 53-260.
- Kirtikar, K.R., Basu, B.D. (1935).** *Indian Medicinal Plants,* Vol. I-V. Mahendrapal Singh, Dehra Dun.
- Lalitha, N. (2013).** Protecting Traditional Knowledge in Siddha System of Medicine. *J. Int. Prop. Rig.* 18(5): 272-282.
- Matthew, K.M. (1983).** *The Flora of Tamil Nadu Carnatic.* Vols. 1-3. Rapinet Herbarium, St. Joseph's College, Tiruchirapalli
- Nadkarni A. K. (1976).** Dr. K.M.Nadkarni's Indian Materia Medica volume-I, 3rd edition. Bombay, Popular Prakashan Pvt Ltd. pp. 1089-1090.
- Nadkarni, A.K. (1954).** *Indian Materia Medica,* Vol. I&II. 3rd Edition, Popular Book Dept. Bombay.
- Nair, N.C., Henry, A. N. (1983).** *Flora of Tamil Nadu, India.* Ser. 1: Analysis. Vol. 1. Botanical Survey of India (BSI), Coimbatore.
- Nayar, M.P., Sastry, A.R.K. (1987 - 1990).** *Red Data Book of Indian Plants.* Vols. 1-3. Botanical Survey of India (BSI), Howrah.
- Pei-Sheng, J. (2001).** Ethno botanical approaches of traditional Medicine Studies some experiences from *Asian J. Phar.Biol.* (39):74-79.
- Sadacharam, V., Thillaivanan, S., Kanagavalli, K., Parthipan, P. (2013).** A Review on anti-Ulcer Herbs in Siddha Medicine. *Int. J. Phar. Res. Bio. Sci.* 2(5): 279-293.
- Santapau, H. (1955).** *Botanical Collector's manual- A Handbook.* Govt. Press, New Delhi.
- Savarimuthu, S.I., Muniappan, M. and Ayyanar, S.K. (2006).** Ethno-botanical investigations among tribes in Madurai district of Tamil Nadu. *J. EthnoBiol. Ethno Med.* 2: 25-28
- Sukumaran, S., Raj, A.S. (2010).** Medicinal Plants of Sacred groves in Kanyakumari district, Southern Western Ghats. *Ind. J. Trad.Know.* 9(2): 294-299.
- Pragash and Mehotra (1987).** Anthelmintic Plants in Traditional remedies in India. *Ind. J. Hist. Sci.* 22 (4): 332-340.
- Yoganarasimhan, S.N. (2000).** *Medicinal Plants of India.* Bangalore, India.