

DIVERSITY OF MEDICINAL PLANTS IN A RESTORED LANDSCAPE NEAR PUDUCHERRY, SOUTH INDIA

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ABSTRACT

The present study has been carried out during 2012-14 in the study site called the Lake Estate, which is situated 10 km west of Puducherry town. During the study a total of 272 plant species were encountered of which 236 species represented from 201 genera and 69 families were found to be medicinal and used in various systems of medicines, in which 77 are herbs, 41 shrubs, 46 climbers and 72 trees. About 202 species were recorded in Folk medicine, followed by Siddha (153), Ayurveda (140), Unani (50), Tibetan (41), Homeopathy (21) and Modern medicine (4). Three species viz., *Cissampelos pareira* var. *hirsuta*, *Santalum album* and *Strychnos nux-vomica* are used in all systems of medicines.

Keywords: Eco-restoration, Medicinal Plants, Tropical Dry Evergreen Species, Puducherry, South India

INTRODUCTION

The association of humans with plants obviously originated with the beginning of human life on earth when plants provided the oxygen, food, forage, shelter, and medicine needed for higher life forms. Over time and with the beginning of societies, humans learned to recognize and categorize plant materials suited for use in meeting the necessities of life. Of these necessities, the use of plants and plant extracts for healing can be traced to the earliest of myths, traditions, and writings used to codify those plant materials that could ease pain and treat diseases (Mamedov and Craker, 2010).

India has now begun to search the roots in the past and revive the lost glory of the traditional system of medicine which flourished here for several centuries and contributed much to the development of medicinal science to the world. In India many systems of medicines have evolved including Folk, Siddha, Ayurveda, Homeopathy, Tibetan, Unani and Modern. Because of the awareness on health care, the revival of traditional practice of herbal drugs has gained importance and in exploring medicinal and aromatic plants throughout the world. Due to easy availability, no side-effects, and sometimes only source of health care, the demand for medicinal plants is increasing in both developing and developed countries. According to Schippmann *et al.*, (2002) more than 50,000 species are used for medicinal purposes worldwide, of which almost 13% are flowering plants. Nearly 550 ethnic tribes dwelling in different forest regions have vast amount of traditional knowledge about medicinal plants. The Foundation for Revitalization for Local Health Tradition (FRLHT), Bangalore has reported that 4775 plants are used in Folk medicinal system; 1689 in Ayurveda; 1563 in Siddha; 843 in Unani; 491 in Homeopathy; 343 in Tibetan and 200 plants in Modern medicine. This includes nearly 8000 species which are used as herbal remedies for a variety of ailments under different systems of medicines. The medicinal plants diversity in different bio-geographic regions in India is highlighted (Rao, 2016). It is roughly estimated that West Himalayas harbours 1500 species of medicinal plants, East Himalayas 3000, Western Ghats 3500, Eastern Ghats 1500, Andaman & Nicobar Island 750 species. Further, it is shown that Tamil Nadu hosts for about 1574 medicinal species, Kerala 1500, Karnataka 1495, Andhra Pradesh 1100 species (Rao, 2016). The World Health Organization (1999) estimated that about 80% of the populations of the developing countries rely on traditional medicines, mostly plant drugs, for their primary health care.

The medicinal plants diversity is in peril due to over exploitation of trade species, destructive way of collection, vulnerability due to anthropogenic pressure and climate change. The productive lands in the India are also in the constant process of various degrees of degradation and turning into wastelands (Trivedi, 2010). Conservation and sustainable use of medicinal plants are issues on which immediate

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focus is required in the context of conserving the medicinal plants diversity. It is inevitable to make a periodical record of diversity of medicinal plants and preserve them *in situ*. Considering these facts a survey has been carried out on medicinal plants diversity and their use in various systems of medicines in an eco-restored landscape near Puducherry, South India.

Dabholkar and Tejomurthy (1959) were the first who published a comprehensive documentation of medicinal plants in Puducherry. Later Kadamban *et al.*, (2003, 2004) have made a record on plants used for gynecological and hepatic diseases by the traditional medical practitioners. Kadavul *et al.*, (2005) evaluated the medicinal value of 25 tree barks. Ethnobotanical and conservation value of 40 species was studied by Sankitha and Kadavul (2007).

Pragasam *et al.*, (2008) have reported the medicinal properties of some locally available green leafy vegetables of Puducherry region. Recently, Balachandran and Rajendiran (2014) have brought out the medicinal wealth of climbers from the tropical dry evergreen forests of Tamil Nadu and Pondicherry region.

MATERIALS AND METHODS

The study site called the Lake Estate, is situated 10 km west of Puducherry town ($11^{\circ} 57' 8.3''N$, $79^{\circ} 45' 57.2'' E$ and 40m asl). It spreads over 160ha of which 40ha (named as Merville) have been afforested through eco-restoration from a barren eroded gully landscape with red ferrallitic soil over a period of more than 35 years by the involvement of Sri Aurobindo International Centre of Education (Figure 1). The total mean annual precipitation of 1371 ± 354 mm from 56 ± 10 rainy days have been recorded in last thirty five years (1981 - 2015).

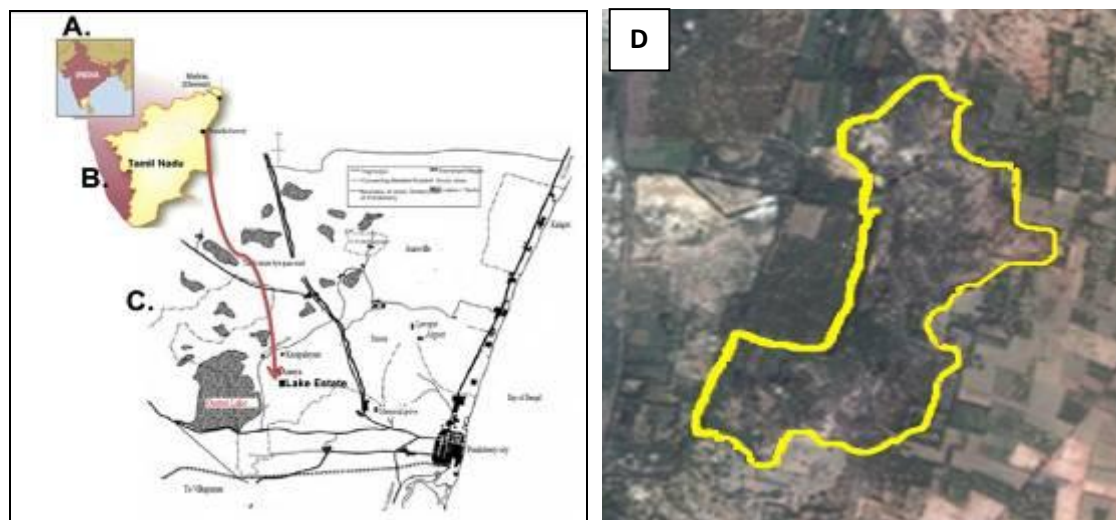


Figure 1: Location Map of the Study Site (A. India, B. South India Including Puducherry, C. The Study Site, D. Satellite View of Merville)

Eco-restoration comprised active human intervention through the introduction of drought tolerant soil nitrogen fixing species and Tropical Dry Evergreen Forest (TDEF) elements along with native pollinators, especially *Apis cerana* Fabricius that were found in the canyons of the original fragmented landscape; construction of check-dams along the gullies to prevent the soil erosion and conservation of rainwater to increase the soil fertility and ground water level; simultaneous development of nurseries for propagating the collected seeds and seedlings from various regions helped increase the diversity and richness of vegetation.

As a result, the introduced TDEF species have established themselves and have naturally regenerated along the thickets in the past thirty years. Lowland herbaceous species have also established themselves as a green cover and soil texture has been transformed and the fertility increased (Figure 2).

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Figure 2: Different Stages of the Restored Study Site (A. During-1981, B. in 1992, C. in 2009)

The present study on diversity of medicinal plants has been carried out during 2012-14 in this site. One hundred and six quadrates of 10 x 10 meters were laid. Periodical visits have been made to the study site and the plants were enumerated. All the species observed were collected and duly identified with the help of local floras (Gamble and Fischer, 1915 - 1935; Matthew, 1981 - 1983; Nair *et al.*, 1983; Henry *et al.*, 1987; Henry *et al.*, 1989) and cross checked with Herbarium-French Institute of Pondicherry (HIFP) and AURO herbarium (AURO). The documented plant names and author citations have been verified with 'The Plant List' (2012). Herbarium sheets were prepared from the voucher samples and deposited at AURO herbarium, Auroville.

RESULTS AND DISCUSSION

At present, the study site consists of a mosaic of native species from Tropical Dry Evergreen Forest and exotics from various tropical countries. As a result of ecological study a total of 272 plants were recorded of which 236 plants from 201 genera and 69 families used in different system of medicines (Table 1). These include 77 herbs, 41 shrubs, 72 trees and 46 climbers (Figure 3). Folk medicine placed first (202 species) followed by Siddha (153), Ayurveda (140), Unani (50), Tibetan (41), Homeopathy (21) and Modern (4) (Figure 4). Only three species viz., *Cissampelos pareira* var. *hirsuta*, *Santalum album* and *Strychnos nux-vomica* are used in all system of medicine (Plate 1 & 2).

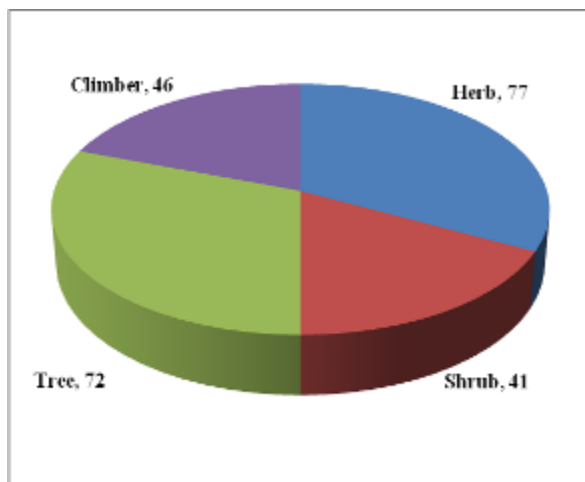


Figure 3: Life Forms of Medicinal Plants of the Study Site

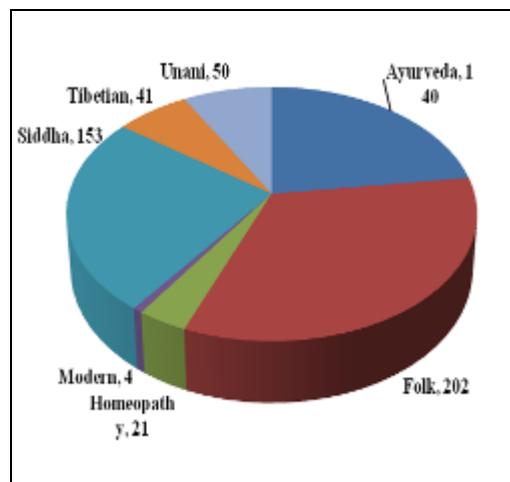


Figure 4: Number of Plant Species Recorded in Different Systems of Medicines

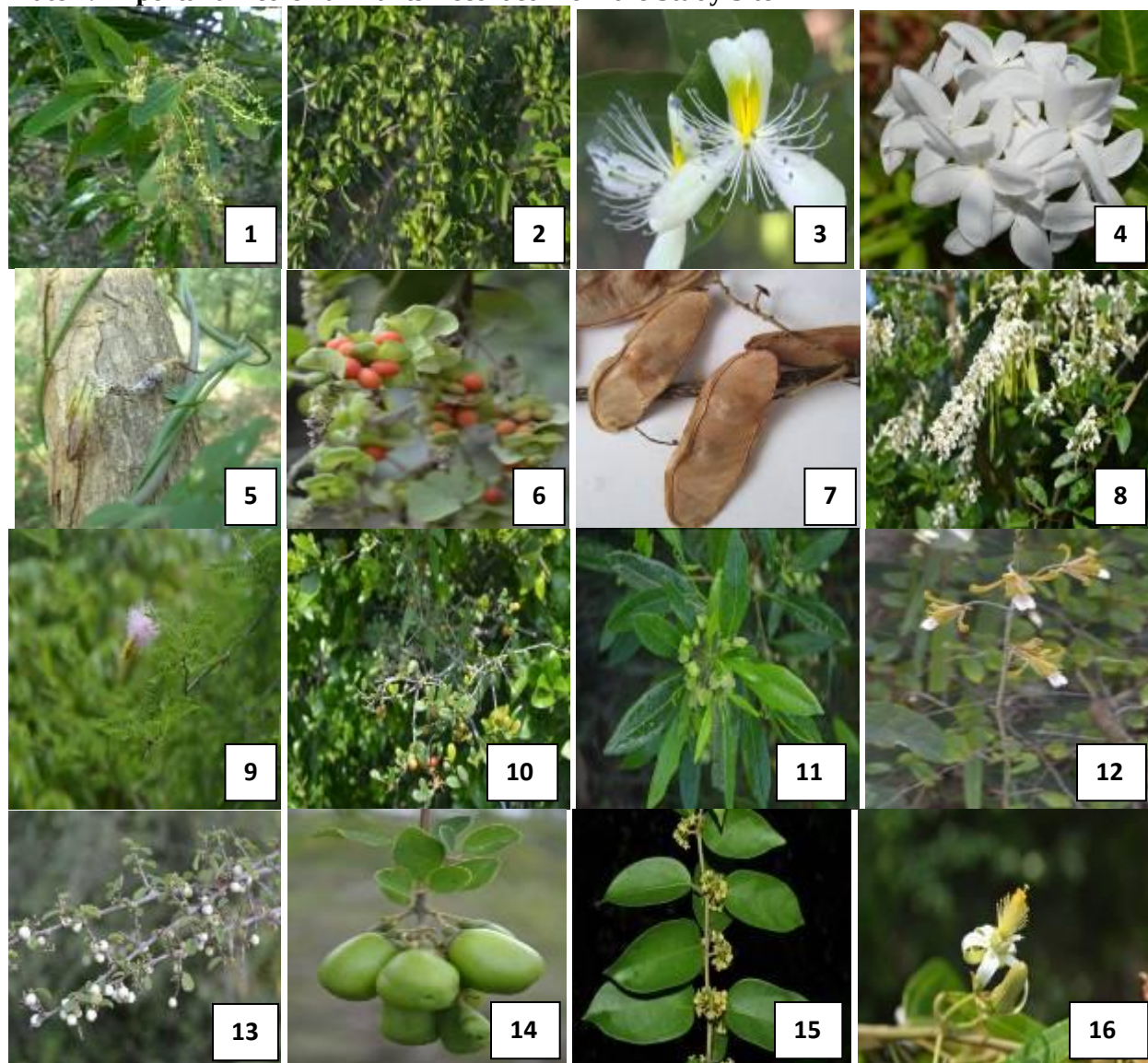
Eleven species such as *Abrus precatorius*, *Aegle marmelos*, *Azadirachta indica*, *Calotropis gigantea*, *Ficus benghalensis*, *Gymnema sylvestre*, *Mangifera indica*, *Semecarpus anacardium*, *Syzygium cumini*, *Terminalia arjuna* and *Tinospora cordifolia* are used in most of the medical systems (Plate 1, 2). Twenty species are recorded to be used in 5 systems, 21 plants in 4 systems, 55 in 3 systems, 49 plants in 2 systems and 77 in only one kind of system. Rare, endangered and noteworthy species viz., *Ceropegia*

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juncea, *Derris ovalifolia*, *Gymnema sylvestre* and an orchid namely, *Eulophia epidendraea* are recorded in this study (Plate 1 & 2). The representation of Fabaceae and Euphorbiaceae as the main families of this region is in conformity with the studies of Nair *et al.*, (1983), Parthasarathy *et al.*, (2008), Udayakumar and Parthasarathy (2012) and Ponnuchamy *et al.*, (2013).

The present study reveals that the study site will serve as a living genetic resource for future references and also as a model site for reclamation and eco-restoration works, because in India nearly 50% of the dry lands are devoid of forests. This would further strengthen the motto of Ministry of Environment and Forest (2007) and Ministry of Rural Development (2010) to develop the sustainable ecosystem against the threat of genetic erosion due to global warming and climate change, environmental crisis and to enhance the natural resources.

Plate 1: Important Medicinal Plants Recorded from the Study Site



1. *Buchanania Axillaries*, 2. *Canthium Coromandelicum*, 3. *Capparis Brevispina*, 4. *Carrisa Spinarum*, 5. *Ceropegia Juncea*, 6. *Cissampelos Pareira*, 7. *Derris Ovalifolia*, 8. *Derris Scandens*, 9. *Dichrostachys Cinerea*, 10. *Diospyros Ferrea*, 11. *Dodonaea Angustifolia*, 12. *Eulophia Epidendraea*, 13. *Fleuggea Leucopyrus*, 14. *Gmelina Asiatica*, 15. *Gymnema Sylvestre*, 16. *Grewia Rhamnifolia*

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Plate 2: Important Medicinal Plants Recorded from the Study Site (Continued)



1. *Hugonia Mystax*, 2. *Ixora Pavetta*, 3. *Mitrangyna Parvifolia*, 4. *Memeyclon Umbellatum*, 5. *Mollugo Pentaphylla*, 6. *Morinda Coreia*, 7. *Pavetta Indica*, 8. *Phyllanthus Urinaria*, 9. *Pentatropis Capensis*, 10. *Phoneix Pusilla*, 11. *Polygala Arvensis*, 12. *Ochnea Obtusata*, 13. *Randia Dumetorum*, 14. *Sansevieria Roxburghiana*, 15. *Santalum Album*, 16. *Spermacoce Ocymoides*, 17. *Striga Angustifolia*, 18. *Strychnos Nux-Vomica*, 19. *Wrightia Tinctoria*, 20. *Ximenia Americana*

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Table 1: The Family, Binomial, Vernacular Names and Life Form of the Plants from the Study Site and Different Systems of Medicines Used

Family Names	Binomial Names	Vernacular Names	Life Form	System of Medicine
Acanthaceae	<i>Andrographis alata</i> (M.Vahl) Nees	Periya nangai	H	F
	<i>Asystasia gangetica</i> (L.) T. Anderson	—	H	F,S
	<i>Barleria prionitis</i> L.	Kodippachalai	H	F,S,A
	<i>Blepharis maderaspatensis</i> (L.) Heyne ex Roth	—	H	F
	<i>Dipteracanthus patulus</i> (Jacq.) Nees	Pottakanchi	H	S
	<i>Ecboium viridae</i> (Forssk.) Alston	Nilaambari	H	S,A
	<i>Justicia procumbens</i> L.	—	H	S,A
	<i>Justicia prostrata</i> (C.B. Clarke) Gamble	—	H	F
	<i>Lepidagathis cristata</i> Willd.	Karappanpoondur	H	F,S
	<i>Ruellia tuberosa</i> L.	—	H	F
Agavaceae	<i>Agave americana</i> L.	Anekatalal	SH	S,A,H,U
	<i>Agave sisalana</i> Perrine	—	SH	F
	<i>Sansevieria roxburghiana</i> Shultes & Schultes f.	Murvam	H	S,A,T
Amaranthaceae	<i>Achyranthes aspera</i> L.	Nayurivi	H	F
	<i>Aerva lanata</i> (L.) Juss.	Sirupulai	H	F,S,A
	<i>Allmania nodiflora</i> (L.) R.Br.	Vannikirai	H	F
	<i>Alternanthera ficoidea</i> (L.) Sm.	—	H	F
	<i>Amaranthus spinosus</i> L.	Mullukkirai	H	F,S,A,T
	<i>Celosia argentea</i> L.	Pannaikirai	H	A,T
	<i>Anacardium occidentale</i> L.	Mundiri	T	F,S,A,H
Anacardiaceae	<i>Buchanania axillaries</i> (Desr.) T.P.Ramamoorthy	Mundamah	T	F
	<i>Lannea coromandelica</i> (Houtt.) Merr.	Udhayamaram	T	F,A
	<i>Mangifera indica</i> L.	Mamaram	T	F,S,A,T,U,H
	<i>Semecarpus anacardium</i> L.f.	Serankottai	T	F,S,A,T,U,H
	<i>Annona squamosa</i> L.	Sita	T	F,S,A,U
Annonaceae	<i>Polyalthia longifolia</i> (Sonn.) Thwaites	Nettilingam	T	F,S,A
Apocynaceae	<i>Carrisa spinarum</i> L.	Chirukila	SH	F
	<i>Cantharanthus roseus</i> (L.) Don	Nithiyakalyani	H	F,A,M
	<i>Ichnocarpus frutescens</i> (L.) R.Br.	Udagodi	C	F,S,A,T
	<i>Plumeria rubra</i> L.	Malaiarali	T	F
	<i>Rauvolfia tetraphylla</i> L.	Pampukala	SH	F
	<i>Wrightia tinctoria</i> (Roxb.) R.Br.	Vapaalai	T	F,S,A,H,U

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Arecaceae	<i>Borassus flabellifer</i> L.	Panaimaram	T	F,S,A,T,U
	<i>Phoneix pusilla</i> Kunth	Eachimaram	SH	F
Aristolochiaceae	<i>Aristolochia indica</i> L.	Eswaramuli	C	F,S,A,T,U
Asclepiadaceae	<i>Calotropis gigantea</i> (L.) R.Br.	Erukku	SH	F,S,A,H,T,U
	<i>Ceropegia juncea</i> Roxb.	—	C	F
	<i>Gymnema sylvestre</i> (Retz.) R.Br.ex Roemer & Schultes	Shirukurinja	C	F,S,A,H,T,U
	<i>Hemidesmus indicus</i> (L.) R.Br.	Nannari	C	F,S,A,T,U
	<i>Pentatropis capensis</i> (L.f.) Bullock.	Uppili	C	F,A
	<i>Pergularia daemia</i> (Forsskal) Chiov.	Velipparuthi	C	F,S,A
	<i>Sarcostemma intermedium</i> Decne.	Kodikhalli	C	S
	<i>Wattakaka volubilis</i> (L.f.) Stapf	Kodippalai	C	S
Asparagaceae	<i>Asparagus racemous</i> Willd.	Thannervittan kizhangu	C	F,S,A,T,U
Asteraceae	<i>Ageratum conyzoides</i> L.	Pumppillu	H	F,S,A
	<i>Eclipta prostrate</i> (L.) L.	Karisalnkani	H	S,A
	<i>Synedrella nodiflora</i> (L.) Gnertner	—	H	F
	<i>Tridax procumbens</i> L.	Vettukkaayapundu	H	F,S,A
	<i>Vernonia cinerea</i> (L.) Less.	Mukuttipundu	H	F,S,A,T,U
Bignoniaceae	<i>Dolichandrone falcata</i> (DC.) Seemann	Kattuvvarsana	T	F,S,A,T
	<i>Kigelia pinnata</i> (Jacq.) DC.	—	T	F
Boraginaceae	<i>Carmona retusa</i> (M. Vhal) Masam	Kurangu vethilai	SH	F,S
	<i>Coldenia procumbens</i> L.	Seruppada	H	A,F,S
	<i>Ehretia pubescens</i> Benth.	Adalai	T	A
Burseraceae	<i>Garuga pinnata</i> Roxb.	Mampullichai	T	F,S,A,T
Caesalpinaceae	<i>Caesalpinia coriaria</i> (Jacq.) Willd.	Inkimaram	T	S,U
	<i>Cassia alata</i> L.	Seemaiakathi	SH	F,S,A
	<i>Cassia auriculata</i> L.	Avaram	SH	F,S,A
	<i>Cassia fistula</i> L.	Sarakonnai	T	F,S,A,T,U
	<i>Cassia javanica</i> L.	—	T	F
	<i>Cassia mimosoides</i> L.	—	H	F
	<i>Cassia siamea</i> Lam.	Manjakonnai	T	F,S
	<i>Cassia tora</i> L.	Tagarai	H	F,S,A,T,U
	<i>Delonix regia</i> (Hook.) Raf.	Mayilkonrai	T	S
	<i>Hardwickia binata</i> Roxb	Acha	T	F
	<i>Peltophorum pterocarpum</i> (DC.) Backer ex K. Heyne	Ivalvagai	T	F,S

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	<i>Tamarindus indica</i> L.	Puli	T	F,S,A,T,U
Capparidaceae	<i>Cadaba fruticosa</i> (L.) Druce	Vizhuthi	SH	F,S
	<i>Capparis brevispina</i> DC.	—	SH	F
	<i>Capparis sepiaria</i> L.	Sength thari	SH	F,S,A
	<i>Capparis zeylanica</i> L.	Aathandai	C	F,S,A
Caryophyllaceae	<i>Polycarpaea corymbosa</i> (L.) Lam.	Nilaisedachi	H	F,S,A
Casuarinaceae	<i>Casuarina equisetifolia</i> Forster & Forster f.	Chavuku	T	F,S
Celastraceae	<i>Cassine glauca</i> (Rottb.)	Karuvai	T	F
	<i>Maytenus emarginata</i> (Willd.) Ding Hou	—	SH	F
Cleomaceae	<i>Cleome viscosa</i> L.	Naivelai	H	S,A,U
Clusiaceae	<i>Garcinia spicata</i> Hook.f.	Kokottai	T	F
Comberetaceae	<i>Terminalia arjuna</i> (DC.) Wight & Arn	Vellamaruthu	T	F,S,A,H,T,U
	<i>Terminalia cattapa</i> L.	Natuvadham	T	F,S,A,U
Commelinaceae	<i>Commelina benghalensis</i> L.	Kanavazhai	H	F,S,A
	<i>Cyanotis tuberosa</i> (Roxb.) Schultes & Schultes f.	—	H	F
Convolvulaceae	<i>Evolvulus alsinoides</i> (L.) L.	Vishnukarandi	H	F,S,A,T,U
	<i>Merremia tridentata</i> (L.) Hallier f.	—	C	A
	<i>Ipomoea carnea</i> Jacq.ssp. <i>fistulosa</i> (Choisy) D. Austin	—	SH	F
	<i>Ipomoea sepiaria</i> J. Koenig ex Roxb.	Talikkirai	C	F,S,A
Cordiaceae	<i>Cordia dichotoma</i> G.Forst	—	T	F
Crassulaceae	<i>Kalanchoe pinnata</i> (Lam.) Pers.	Runakalli	H	S,A
Cucurbitaceae	<i>Coccinia indica</i> Wight & Arn.	Kovai	C	S,A,T,U
	<i>Ctenolepis garcinii</i> (Burm.f.) C.B. Clarke	Kollankovai	C	F
	<i>Cucumis melo</i> L.	Sukkangkai	C	A,U
	<i>Diplocyclos palmatus</i> (L.) C. Jeffrey	Sirumpalai	C	A
	<i>Kedrostis foetidissima</i> (Jacq.) Cogn.	—	C	F
	<i>Mukia maderaspatana</i> (L.) M. Roemer	Musumusukkai	C	F,S,A
Ebenaceae	<i>Diospyros ferrea</i> (Willd.) Bakh.	Iramballi	SH	F
Euphorbiaceae	<i>Acalypha indica</i> L.	Kuppaimeni	H	F,S,A,H
	<i>Breynia retusa</i> (Dennst.) Alston	—	SH	F,A
	<i>Breynia vitis-idaea</i> (Burm.f.) C. Fischer	Kattuniruri	SH	F,S
	<i>Bridelia retusa</i> (L.) Sprengel	Mullu-vengai	T	F,S,A
	<i>Croton bonplaiodon</i> Baillon	Reilpoond	H	F,S
	<i>Drypetes roxburghii</i> (Wallich) Hurusawa	Karupala	T	F,S,A

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Fabaceae	<i>Euphorbia cyathophora</i> Murray	—	H	F
	<i>Euphorbia hirta</i> L.	Aman-patchaiarisi	H	F,S,A,U
	<i>Fleuggea leucopyrus</i> Willd.	Vellaipoola	SH	F
	<i>Jatropha gossypifolia</i> L.	Adalai	SH	F,S,A
	<i>Mallotus philippensis</i> (Lam.) Muell. Arg.	Kapli	SH	F,S,A,H,U
	<i>Phyllanthus debilis</i> Klein ex Willd.	—	H	F
	<i>Phyllanthus urinaria</i> L.	—	H	F,A
	<i>Phyllanthus madrespatensis</i> L.	Melanelli	H	F,S,A,U
	<i>Phyllanthus polyphyllus</i> Willd.	Sirunelli	T	F
	<i>Phyllanthus reticulatus</i> Poiret	Karumpula	C	F,S,A
	<i>Sebastiania chamaelea</i> (L.) Muell. Arg	—	H	F,S
	<i>Suregada angustifolia</i> (Muell. Arg).	Kakaipalai	SH	F
	<i>Tragia involucrata</i> L.	Punaikanjan	C	F,S,A
	<i>Abrus precatorious</i> L.	Kundumani	C	F,S,A,T,H,U
	<i>Aeschynomene indica</i> L.	Nettithakkai	H	S
	<i>Alysicarpus monilifer</i> (L.) DC.	Kasukodi	H	F,S
	<i>Atylosia scarabaeoides</i> (L.) Benth.	—	C	F
	<i>Bauhinia racemosa</i> Lam.	Atti	T	S,A,U
	<i>Butea monosperma</i> (Lam.) Taubert	Porasu	T	F,S,A,T,U
	<i>Canavalia virosa</i> (Roxb.) Wight & Arn.	Kattu kozhiavarai	C	F
	<i>Clitoria ternatea</i> L.	Sangupuspam	C	F,S,A,T,U
	<i>Crotalaria medicaginea</i> Lam	—	H	F
	<i>Dalbergia paniculata</i> Roxb.	Arivaagai	T	F
	<i>Derris ovalifolia</i> (Wight & Arn.) Benth.	Thegali	C	F
	<i>Derris scandens</i> (Roxb.) Benth	Thirundankodi	C	S
	<i>Desmodium triflorum</i> (L.) DC	—	H	F,S,A
	<i>Gliricidia sepium</i> (Jacq.) Kunth ex Walp.	Vivasaiyathagrai	T	F
	<i>Indigofera aspalathoides</i> Vahl ex DC.	Sivanarvempu	H	F,S,A
	<i>Indigofera astragalina</i> DC.	—	H	F
	<i>Indigofera trifoliata</i> L.	—	H	F
	<i>Indigofera trita</i> L.f.	—	H	F,S
	<i>Pongamia pinnata</i> (L.) Pierre	Pongan	T	F,S,A,T,U
	<i>Pseudarthria viscida</i> (L) Wight & Arn	Pitani	H	F,S,A
	<i>Pterocarpus santalinus</i> L.f.	Censanthanam	T	F,S,A,T,U

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	<i>Rhynchosia minima</i> (L.) DC.	—	C	F,S
	<i>Stylosanthes fruticosa</i> (Retz.) Alston	—	H	F
	<i>Tephrosia maxima</i> (L.) Pers.	—	H	F
Flacourtiaceae	<i>Flacourtia indica</i> (Burm.f.) Merr.	Katukalai	SH	F,S,A,T
Gentianaceae	<i>Enicostema axillare</i> (Lam.) A. Raynal	Vellaragu	H	F,S,A
Hernandiaceae	<i>Gyrocarpus americanus</i> Jacq.	Karamanikkay	T	F,S
Hippocrateaceae	<i>Reissantia indica</i> (Willd.) Hall'e	Odankodi	C	F
Lamiaceae	<i>Hyptis suaveolens</i> (L.) Poit.	—	H	F,A
	<i>Leucas aspera</i> (Willd.) Link	Thumbai	H	F,S,A,H
	<i>Ocimum canum</i> Sims	Naai alangi	H	S,A,H,
	<i>Orthosiphon thymiflorus</i> (Roth) Sleesen	—	H	A
Lauraceae	<i>Cassytha filiformis</i> L.	Erumaikkottan	C	F,S,A
Lecythidaceae	<i>Careya arborea</i> Roxb.	—	T	F,S,A
Linaceae	<i>Hugonia mystax</i> L.	Motirakanni	C	F,S,A
Loganiaceae	<i>Strychnos minor</i> Benth	—	C	F,A
	<i>Strychnos nux-vomica</i> L.	Yetti	T	F, S,A,H,T,U,M
Malvaceae	<i>Sida acuta</i> Burm.f.	Ariva-mooku keerai	H	F,S,A
	<i>Sida cordata</i> (Burm.f.) Borssum Waalkes	Palampasi	H	S,A
	<i>Sida rhombifolia</i> L.	Chitr mutti	H	F,S,A
	<i>Pavonia zeylanica</i> (L.) Cav.	Mammatti	H	F,S,A
Melastomataceae	<i>Memeyclon umbellatum</i> Burm.f.	Allamaram	SH	F,A
Meliaceae	<i>Azadirachta indica</i> Adr.Juss.	Vembu	T	F,S,A,H,T,U
	<i>Walsura trifoliata</i> (Adr. Juss.) Harms	Walsura	T	F,S
Menispermaceae	<i>Cissampelos pareira</i> L. var. <i>hirsuta</i> (DC.) Forman	Appatta	C	F,S,A,H,T,U,M
	<i>Cocculus hirsutus</i> (L.) Diels	Kattukodi	C	F,S,A,U
	<i>Pachygone ovata</i> (Poiret) Hook.f. & Thomson	Kadukkodi	C	F
	<i>Tinospora cordifolia</i> (Willd.) Hook.f. & Thomson	Chindilkodi	C	F,S,A,H,T,U
Mimosaceae	<i>Acacia chundra</i> (Rottler) Willd.	Karungkali	T	A
	<i>Acacia leucophloea</i> (Roxb.) Willd.	Velvelam	T	F,S,A
	<i>Acacia sinuata</i> (Willd.) DC	Seekai	C	F,A
	<i>Adenanthera pavonina</i> L.	Anai kundumani	T	S,A
	<i>Albizia lebbeck</i> (L.) Benth.	Vagai	T	F,S,A,U
	<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	Vidathalan	SH	F
	<i>Mimosa pudica</i> L.	Thottrachenugi	H	F

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	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Kodukapuli	T	F
Molluginaceae	<i>Mollugo pentaphylla</i> L.	Seragapoondu	H	F,S
Moraceae	<i>Ficus benghalensis</i> L.	Aalamaram	T	F,S,A,H,T,U
	<i>Ficus hispida</i> L.f.	Peyatthi	SH	F,S,A,T,U
Myrtaceae	<i>Eucalyptus citriodora</i> Hook.	Thailamaram	T	F
	<i>Syzygium cumini</i> (L.) Skeels	Naaval	T	F,S,A,H,T,U
Nyctaginaceae	<i>Boerhavia diffusa</i> L.	Mukkuratti	H	F,S,A,H,U
Ochnaceae	<i>Ochna obtusata</i> DC.	Padalakkonai	SH	F,S
Olacaceae	<i>Ximenia americana</i> L.	Chiru-illanthi	SH	F,S
Oleaceae	<i>Jasaminum angustifolium</i> (L.) Willd.	Kaattumalligai	C	F,S,A
Orchidaceae	<i>Eulophia epidendrea</i> (Retz.) C. Fischer	—	H	F
Passifloraceae	<i>Passiflora foetida</i> L.	Siruppunaikkali	C	F,S,A
Pedaliaceae	<i>Martynia annua</i> (Houstonun in Martyn) L.	Thelkodukukai	H	F,S,A
Plumbaginaceae	<i>Plumbago zeylanica</i> L.	Chitramulam	H	F,S,A,T,U
Poaceae	<i>Bambusa arundinacea</i> Willd.	Mungil	T	F,S,A,U
Polygalaceae	<i>Polygala arvensis</i> Willd.	—	H	S
Rhamnaceae	<i>Scutia myrtina</i> (Burm.f.) Kurz	Kokimullu	SH	S
	<i>Ventilago maderaspatana</i> Gaertner	Vempadam	C	F,S,A
	<i>Ziziphus oenoplia</i> (L.) Miller	Suraimullu	C	F,S,A
	<i>Ziziphus xylopyrus</i> (Retz.) Willd.	Kotteilandai	T	F,S,A
Rubiaceae	<i>Spermacoce ocymoides</i> Burm.f.	—	H	F,A
	<i>Canthium coromandelicum</i> (Burm.f.) Alston	Theranai	SH	F
	<i>Ixora pavetta</i> Andrews	Sulundu korai	T	F,S
	<i>Mitrangyna parvifolia</i> (Roxb.) Korth.	Neerkadambai	T	F,A,Y
	<i>Morinda coreia</i> Buch.-Ham.	Nuna	T	S,A
	<i>Morinda pubescens</i> J. E. Smith	Nuna	T	F
	<i>Oldenlandia herbacea</i> (L.) Roxb.	Kattu kothammali	H	F,S,A,H
	<i>Oldenlandia umbellata</i> L.	Saiver	H	F,S
	<i>Pavetta indica</i> L.	Pavatai	SH	F,S,A
	<i>Psilanthus wightianus</i> (Wight & Arn.) J. Leroy	Veadan	SH	F
	<i>Randia dumetorum</i> (Retz.) Poiret	Madukkarai	SH	S,A,T,U
	<i>Tarenna asiatica</i> (L.) Kuntze ex Schumann	Kura	SH	F,S
Rutaceae	<i>Aegle marmelos</i> (L.) Corr. Serr.	Vilvam	T	F,S,A,H,T,U,
	<i>Atalantia monophylla</i> (L.) Corr. Serr.	Kattunarangam	T	F,S,A

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	<i>Clausena dentate</i> (Willd.) Roemer	Kattu kariveppalai	SH	F,S
	<i>Chloroxylon swietenia</i> DC.	Vammarai	T	F,S,A
	<i>Glycosmis mauritiana</i> (Lamk.) Yuich.Tanaka	Kongi	SH	F
	<i>Limonia acidissima</i> L.	Vila	T	A
	<i>Toddalia asiatica</i> (L.) Lam. var. <i>floribunda</i> Gamble	Kindumullu	SH	F,S,A
Santalaceae	<i>Santalum album</i> L.	Sandanam	T	F,S,A,H,T,U,M
Sapindaceae	<i>Allophylus serratus</i> (Roxb.) Kurz	Amalai	SH	F,S,A
	<i>Dodonea angustifolia</i> L.f.	Virali	SH	F
	<i>Lepisanthes tetraphylla</i> (Poirot) Leenh	Kugamathi	T	F
	<i>Sapindus emargiata</i> M.Vahl	Pounanga	T	F,S,A
Sapotaceae	<i>Manilkara hexandra</i> (Roxb.) Dubard	Ulagai ppallai	T	F,A
	<i>Mimusops elengi</i> L.	Magizamaram	T	F,S,A,T,U
Sterculiaceae	<i>Helicteres isora</i> L.	Valamburi	T	F,S,A,U
	<i>Hildegardia populifolia</i> (Roxb.) Schott & Endrl.	Malaipooarusu	T	F
	<i>Guazuma ulmifolia</i> Lam.	Kattu Rudrasam	T	F,S
	<i>Kleinhovia hospita</i> L.	Panaitteku	T	F,S
	<i>Melochia corchorifolia</i> L.	Pinnakkuppundu	H	F,S
	<i>Pterospermum suberifolium</i> Lam.	Polavu	T	S,A,U
	<i>Waltheria indica</i> L.	Shembudu	H	F
Tiliaceae	<i>Corchorus aestuanus</i> L.	Punnakukerai	H	F
	<i>Grewia rhamnifolia</i> Heyne ex Roth	—	C	F,S
	<i>Triumfetta rhomboidea</i> Jacq.	Puramuti	H	F,S,A
	<i>Triumfetta rotundifolia</i> Lam.	Adaiyoti	H	S,A
Turneraceae	<i>Turnera ulmifolia</i> L.	—	H	F
Verbenaceae	<i>Lantana camara</i> L.	Unnichi	SH	F
	<i>Gmelina arborea</i> Roxb.	Ummitekku	T	F,S,A,T
	<i>Gmelina asiatica</i> L.	Nilakkumil	SH	F,S,A
	<i>Premna corymbosa</i> (Burm.f.) Rottler & Willd.	Nalla pinna	SH	F,S
	<i>Stachytarpheta jamaicensis</i> (L.) Vahl	Semainaiuruvi	H	F
	<i>Vitex negundo</i> L.	Nochi	T	F,S,A,T,U
Vitaceae	<i>Cissus quadrangularis</i> L.	Perandai	C	F,S,A
	<i>Cissus setose</i> Roxb.	Kangu kelari	C	F,S
	<i>Cissus vitiginea</i> L.	Katutherachi	C	F,S,A
Violaceae	<i>Hybanthus enneaspermus</i> (L.) F.Muell.	Orilalthamarai	H	F,S,A

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