

Qualitative Survey on Medicinal Plants of Jaffna Peninsula, Sri Lanka Identification of Endangered Species and Concerns for Their Conservation

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Abstract: Jaffna peninsula, Sri Lanka has a very rich plant diversity, many of which are medicinally useful. This rich resource will disappear as a result of unawareness, urbanization and over exploitation. The objective of this study was to survey and prepare a checklist to record the medicinal plants through interviews, collection and identification of medicinal plants of Jaffna peninsula for the first time and the usage of these plants to remediate the disease among the people. Exploratory field trips were made to the villages for about 12 months from June 2018 to June 2019 to survey the medicinal plants and collect the information from the four zones villagers through interviews with medicinal plant collectors, Siddha and Ayurveda medical practitioners, elderly farmers, Botany students and general public. From this study 240 species of valuable medicinal plants were recorded and their ethnomedicinal values were collected from the villagers. Also, species of endangered medicinal plants were recorded. This study focuses on the species richness, importance, utilization and conservation for the future generation through ex-situ conservation etc. among the people of Jaffna peninsula, Sri Lanka.

Key words: Medicinal Plants • Jaffna Peninsula • Qualitative Survey • Endangered Species • Germplasm Conservation

INTRODUCTION

It is generally believed that for the availability of special plants dry zones and arid regions are the best. In Jaffna peninsula also there is red soil & dry zone, species richness of medicinal plants [1, 2]. To make an awareness of this and knowledge about their medicinal uses is very useful to people. Our forefathers mostly lived with Mother Nature and their livelihood mainly depended on agriculture. They had ample knowledge about the plants. They mainly depend on the medicinal plants completely or partially for the cure of diseases through traditional methods. Due to urbanization and cultural advancement today, people don't even know the normal plants available in their environment as well as medicinal plants. Medicinal plants are the basic building block of many English medicines. Many diseases are cured using Siddha, Ayurvedic and Unani medicines without any side effects. For some diseases traditional medicine is the one

and only special treatment. Nowadays foreigners get interested in this traditional medicine of India, Sri Lanka and East Asian countries [3]. A checklist was prepared including their scientific names, local names, family and uses to let the general public know about medicinal plants' richness and availability in Jaffna peninsula. Some of the available species in Jaffna peninsula are becoming endangered species to extinct species. It is needed to make awareness and to conserve this valuable treasure by maintaining a germ-plasm conservation center in Jaffna peninsula and also make awareness among general public to make ex-situ conservation of medicinal plants in home garden, schools, temples, community centers, Department of Agriculture, various government Institutions, Universities for us and our future generation [4].

Biodiversity brings enormous benefits to mankind from direct harvesting of plants and animals for food, medicine, fuel construction material and other uses to aesthetic, cultural, recreational and research values.

People have been using medicinal plants from time immemorial for the treatment of various types of disease traditionally. Herbs had been used by all cultures throughout history. It was an integral part of the development. About 80% of the people in developing countries use traditional medicines obtained from local plants and 85% of traditional medicine involve the use of plant extracts [5, 6, 7] for their health care.

About 90% of medicinal plants used in industries are collected from the wild. Over 70% of the plant collection involves destructive harvesting because of the use of the parts like roots, bark, wood, stem and the whole plant in case of herbs. The assessments done so far for the prioritized native medicinal species have resulted in the assignment of threatened status to nearly 200 plant species [8]. In view of the tremendously growing world population, increasing anthropogenic activities, will rapidly erode natural ecosystems, etc. The natural habitat for a great number of herbs and trees is dwindling. Many of them are facing extinction. According to the Red list many of the threatened plant species are critically endangered and vulnerable too [9].

The period since the emergence of humans, has displayed an ongoing biodiversity reduction named as Holocene extinction. Ecologists prefer the acronym HIPPO standing for habitat destruction, invasive species, pollution, human overpopulation and over harvesting are the major reasons for biodiversity reduction [10]. Though Sri Lanka has rich biodiversity the growing demand is putting a heavy strain on the existing resources warning a number of species to be either threatened or endangered category.

Description of Study Area: For the survey and documentation of medicinal plants, intensive exploration trips were conducted for twelve months from June 2018 to June 2019 in four zones of Jaffna peninsula in Figure 1.

Geographically, the entire area of Jaffna peninsula lies on the top (North) of Sri Lanka between latitude 5° 55' and 9° 51' N and longitude 79° 41' and 81° 53' E. The altitude of the study area is about 5m above mean sea level. Temperature scarcely fluctuates in the year, with the mean monthly minimum and maximum temperature 26 - 33°C respectively and annual rainfall reaches 696mm 1125mm

Collection of Plants: The plants were collected in flowering and fruiting conditions. During collection, the plant twigs with few leaves were collected for proper identification. The collected plant twigs were tagged properly with proper accession number and herbarium were prepared when identified immediately.

Field Observation and Records: Medicinal plants which were used by persons who are in medical practices and householders whose vernacular names in Tamil were recorded. All the plants collected were tagged and the data regarding details of the plants were recorded properly and all the specimens collected from the field work were identified with “Medical plants (Indigenous and Exotic) used in Ceylon by D.M.A. Jeyaweera, National Science Council of Sri Lanka, 1982, Dictionary of medicinal plants by Sri Ranjani Sivapalan, Vinothini Shanmugarah, Uni. of Jaffna, 2019 were used to ascertain the nomenclature.

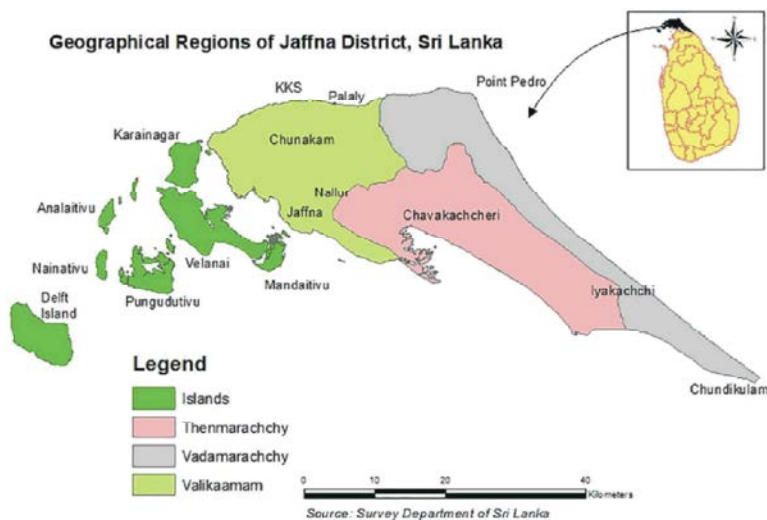


Fig. 1: Geographical regions of Jaffna District, Sri Lanka

RESULTS

Medicinally Important Plants: In the present study 240 medicinally important plant species were collected. Check list was prepared from the Jaffna peninsula, Northern province of Sri Lanka at all season and their botanical name, family, common/local name (Tamil), morphology of the parts used and their medicinal properties were given in Table 1.

Diseases Cured by Medicinal Plants: The villagers used various medicinal plants to remediate variety of diseases and ailments like diarrhea, diabetes, asthma, fever,

jaundice, rheumatism, wounds, cuts, stomach pain, cough, cold, poisonous bites, body heat, body pain, bowl complaint, bronchitis, dysentery, ear-ache, eczema, eye troubles, hair growth, intestinal worms due to its antimicrobial function [11, 12], jaundice, leprosy, menstrual trouble, piles, pimples, ulcer, tooth-ache, urinary troubles, vomit, etc., the villagers used these medicinal plants in the form of juice, paste, powder, extract, decoction, cooked or raw forms.

Red List of Threatened Species: Out of 240 listed species two species were found to be endangered. These are Wild dioscorea and Rauwolfia serpentina.

Table 1: Checklist of medicinal plants in Jaffna peninsula with their common/Botanical/Family names, morphology and their medicinal uses

No	Common name/ Local name (Tamil)	Botanical name	Family	Morphology of parts used	Medicinal use
01	Kundumani	<i>Abrus precatorius</i>	Leguminosae	Dry root	Anti-Leucodermic
02	Vaddathuthi	<i>Abutilon hirtum</i>	Malvaceae	Whole plant	Anti-piles
03	Perumthuthi	<i>Abutilon indicum</i>	Malvaceae	Leaves	Helps maintain body temperature moderately
04	Kupaimaeni	<i>Acalypha indica</i>	Euphorbiaceae	Whole plant	Wormicide, Antifungal
05	Naiuruvi	<i>Achyranthes aspera</i>	Amaranthaceae	Leaves	Anti-piles
06	Aadathodai	<i>Adhatoda vasica /A.indica</i>	Acanthaceae	Leaves	Cure cough and flem
07	Vilvam	<i>Aegle marmelos</i>	Rutaceae	Leaves and fruit	Cure stomach pain, diarrhea and constipation
08	Thankaipoo keerai	<i>Aerua lanata</i>	Amaranthaceae	Whole plant	Cure urinary tract heat, increase urine flow
09	Anaikatralai	<i>Agave americana / A.veracruz</i>	Amarylidaceae	Leaves	Increase urine flow, cure swelling wounds
10	Aninchil	<i>Alangium salviifolium</i>	Alangiaceae	Root	Anti-rabies
11	Uyell	<i>Albizia amara</i>	Leguminosae	Leaves and flower	relieve skin diseases
12	Vaakai	<i>Albizia lebbek</i>	Leguminosae	leaves, bark	Controls swelling & boils
13	Mancal horn poo	<i>Allamanda cathartica</i>	Apocyanaceae	Leaves and bark	Anti-inflammatory, anti-bacterial and anti-fungal
14	Chempukaranai	<i>Alocasia</i>	Araceae	Yam	Use for swellings and boils
15	Perumchempu	<i>Alocacia macrorrhiza</i>	Araceae	Yam	Use for bone setting & wounds
16	Pillaiatralai	<i>Aloe vera</i>	Liliaceae	Leaves	Use for skin care, laxative
17	Peraththai	<i>Alpinia galanga</i>	Zingiberaceae	Yam	Cure of cough and flem
18	Chitharathai	<i>Alpinia officinalis</i>	Zingiberaceae	Yam	Cure of cough and flem
19	Ponangkani	<i>Alternanthera sessilis</i>	Amaranthaceae	Leaves	Improve eye sight, body heat
20	Kuthiravalli	<i>Alysicarpus bupleurifolius</i>	Leguminosae	Whole plant	bone setter
21	Pullardi	<i>Alysicarpus vaginalis</i>	Leguminosae	Root/whole plant	Root use for cure cough, whole plant – bone setter
22	Mullukeerai	<i>Amaranthus spinosus</i>	Amaranthaceae	Leaves	Used in herbal hair oil
23	Arrakeerai	<i>Amaranthus tristis</i>	Amaranthaceae	Leaves	Used in herbal hair oil
24	Kuppaikerai	<i>Amaranthus viridis</i>	Amaranthaceae	Leaves	Used in herbal hair oil
25	Nelavempo	<i>Andrographis paniculata</i>	Acanthaceae	Leaves	cure malaria, reduce body heat, indigestion and weakness.
26	Lamichchai	<i>Andropogon squarrosus</i>	Gramineae	Leaves	Mosquito replant, fragrant Oil
27	Velaikotti	<i>Aponogeton crispum</i>	Aponogetonaceae	Yam	Burning sensation, heart disease
28	Kotti	<i>Aponogeton natans</i>	Aponogetonaceae	Yam	Burning sensation, heart disease
29	Peramathandu	<i>Argemone mexicana</i>	Papaveraceae	Whole plant	Anti-venom
30	Pampukaranai	<i>Arisaema tortuosum</i>	Araceae	leaf, yam	Rheumatism, snake bite and stomach ache
31	Aaduthinapalai	<i>Aristolochia bracteolata</i>	Aristolochiaceae	Leaves	Leaf tincture relieve verms
32	Aaduthinapalaikodi	<i>Aristolochia indica</i>	Aristolochiaceae	Leaves	Anti-leucodermic
33	Shathavari	<i>Asparagus falcatus</i>	Liliaceae	Leaf and stem	Anti-tumor activity
34	Neermulli	<i>Asteracantha longifolia</i>	Acanthaceae	Leaves	Anti-fungal against <i>candida albicans</i>
35	Kuruntha maram	<i>Atalantia ceylanica</i>	Rutaceae	Leaves	Used as bone setter
36	Kaddu alumichchai	<i>Atalantia monophylla</i>	Rutaceae	Leaves	Used for chronic rheumatism
37	Blimpi	<i>Averrhoa bilimbi</i>	Euphorbiaceae	Leaves/fruits	used to cure syphilis and for high blood pressure
38	Periya blimbi	<i>Averrhoa carambola</i>	Euphorbiaceae	Leaves/fruits	Laxative, skin disorder and fever
39	Vempu*[7]	<i>Azadirachta indica</i>	Meliaceae	Leaves/seeds	Anti-inflammatory, anti-viral, anti-bacterial, anti-fungal, anti-pyretic and wound healing activities. Mosquito repellent
40	Eyangu	<i>Azima tetracantha</i>	Salvadoraceae	Leaves/fruits	Reduce body heat, relief tooth ache and ear ache
41	Perami	<i>Bacopa monniera</i>	Scrophulariaceae	Leaves	Cure indigestion and increase urine flow
42	Katkeluvai	<i>Balsamodendron caudatum</i>	Myrrh Burseraceae	Leaves	Cure rheumatism
43	Egkiri	<i>Barleria mysorensis</i>	Acanthaceae	Whole plants	Cure Chest flem
44	Kadukanagamparam	<i>Barleria prionitis</i>	Acanthaceae	Whole plant	Cure tuberculosis.
45	Kadampo	<i>Barringtonia racemosa</i>	Mylrtaceae	Whole plant	Cure cough, asthma and eye inflammation
46	Kodipasali	<i>Basella alba</i>	Chenopodiaceae	Leaves	Cure constipation
47	Chevapo pasali	<i>Basella rubra</i>	Chenopodiaceae	Leaves	Cure constipation
48	Ellupai	<i>Bassia longifolia</i>	Sapotaceae	Flower/seeds	Relief cough, body pain
49	Koku mantharai	<i>Bauhinia purpurea</i>	Leguminosae	Flowers	Relief piles and cough
50	Aththi	<i>Bauainia racemosa</i>	Leguminosae	Flowers	Control diarrhea in babies
51	Thiruvathi	<i>Bauhinia tomentosa</i>	Leguminosae	Whole plant	Anti-bacterial, anti-oxidant, anti-fungal,
52	Varukamanjal	<i>Bixa orellana</i>	Bixaceae	Seed	Antipyretic and insect repellent.
53	Mumsunsukai	<i>Blastonia garcini</i>	Cucurbitaceae	Leaves	Tincture of leaf relief wheezing, cough and fever
54	Moogkarachchi	<i>Boerhaavia diffusa</i>	Nyctagineae	Leaf/stem	Laxative

No	Common name/ Local name (Tamil)	Botanical name	Family	Morphology of parts used	Medicinal use
55	Pana	<i>Borassus flabellifer</i>	Palmae	Sap	Analgesic, antipyretic effects and anti-inflammatory activity,
56	Chathai negelthan	<i>Bryophyllum pinnatum</i>	Crassulaceae	Leaves	Control cough and fever
57	Chataikarachchan	<i>Bryophyllum tubifolium</i>	Crassulaceae	Leaves	Control infections, insect bites, wounds and burns,
58	Palasu	<i>Butea monosperma/B.froncosa</i>	Leguminosae	Seed	Wormicide
59	Poonaikalararchchi	<i>Caesalpinia bonduc</i>	Leguminosae	Leaves / buds	Wheezing and anti-venum
60	Vanni	<i>Caesalpinia coriaria</i>	Leguminosae	Whole plant	Antiperiodic, for dressing sores
61	Kalachchi kodi	<i>Caesalpinia crista</i>	Leguminosae	Whole plant	Anti-inflammation, analgesic activity
62	Punna	<i>Calophyllum inophyllum</i>	Guttiferae	Flower/fruit	Cure soriasis, anti-cancer activity
63	Arugkalai	<i>Calotropis gigantea</i>	Asclepiadaceae	Leaves/ flower	Cure swelling wounds, wheezing, fever and neck pains
64	Kozi Avarai	<i>Canavalia ensiformis</i>	Leguminosae	Leaves	Bone setter
65	Karai	<i>Canthium coromandelicum</i>	Rubiaceae	Leaf/fruit	Cure intestinal worms in children
66	Kathoddy	<i>Capparis zeylanica</i>	Capparidaceae.	Fruit	Cure swelling, boils, piles and antidote to snake bite
67	Mankalli	<i>Caralluma fimbriata</i>	Asclepiadaceae.	Whole plant	Appetite suppressant and anti-obesogenic effects
68	Mudakothan	<i>Cardiospermum helicacabum</i>	Sapindaceae	Leaves	Tincture of leaf relive rheumatism
69	Papaaci	<i>Carica papaya</i>	Leguminosae	Leaves, fruits & seeds	Leaf used for bio pesticide, anti-bacterial and Contraceptive
70	Cirukilla	<i>Carissa spinarum</i>	Apocyanaceae	Flower	cure eye diseases
71	Vandu kolli	<i>Cassia alata</i>	Leguminosae	Leaves	Anti-fungal, anti-malarial and control ring worm
72	Aavarasu	<i>Cassia auriculata</i>	Leguminosae	Whole plant	Cure diabetes, eye infections, rheumatism and urinary tract disorders.
73	Kontrai [18]	<i>Cassia fistula</i>	Leguminosae	Flower, fruit	Cure cancer, constipation, diarrhea, pimples and glandular tumors.
74	Thakarai	<i>Cassia occidentalis</i>	Leguminosae	Whole plant	Anti-bacterial, anti-fungal, anti-malarial and anti-inflammatory
75	Ponnavaarasu	<i>Cassia sophora</i>	Leguminosae	Whole plant	Cure skin diseases (ringworm) and respiratory disorder
76	Vaddaththakarai	<i>Cassia tora</i>	Leguminosae	Whole plant	Anti-microbial and anti-viral activity
77	Paddi	<i>Catharanthus roseus</i>	Apocyanaceae	Whole plant	Anti-tumor, anti-diabetic, anti-microbial and control Leukemia
78	Paruththi	<i>Ceiba pentandra</i>	Malvaceae	Flower	Anti-piles
79	Vallarai	<i>Centella asiatica</i>	Umbelliferae	Leaves	Cure leprosy, lupus, varicose ulcers, eczema, psoriasis, diarrhea, fever & increase memory power
80	Pirandai	<i>Cissus quadrangularis</i>	Vitaceae	Leaf and stem	Used for diabetes, obesity, high cholesterol, bone fractures, allergies, cancer, stomach upset, painful menstrual periods, asthma
81	Paaikommaddy	<i>Citrullus colocynthis</i>	Cucurbitaceae	Whole plant	Cure diabetes, leprosy, common cold, cough, asthma, bronchitis and joint pain
82	Naarathai	<i>Citrus aurantium</i>	Rutaceae	Leaves, fruits	Cure nausea, indigestion and constipation.
83	Naikaduku	<i>Cleome viscosa</i>	Capparidaceae.	whole plant	Cure rheumatic arthritis, hypertension, malaria, neurasthenia and wound healing
84	cadavakai	<i>Clerodendron inerme</i>	Verbanaceae	Leaves/flower	Treating fever, cough, skin rashes and boils,
85	Vathamadakki	<i>Clerodendron phlomidis</i>	Verbanaceae	Leaves	Anti-pyretic, Alterative, Anti-diabetic and anti-rheumatic.
86	Karuthapoo kodi	<i>Clitoria ternatea</i>	Leguminosae	Leaves, root	Use leaf as baby shampoo, root tincture cure constipation and verms. memory enhancer
87	Kowvai	<i>Coccinea cordifolia</i>	Cucurbitaceae	Leaves, fruits	Relieve diabetes, analgesic, anti-pyretic, anti-inflammatory, anti-microbial activities.
88	Karpooravalli	<i>Coleus amboinicus</i>	Labiatae	Leaves	Relieve flem, cough, chronic asthma and bronchitis
89	Chempukarunai	<i>Colocasia esculenta</i>	Araceae	Leaf, yam	Cure asthma, arthritis, diarrhea, internal hemorrhage, neurological disorders
90	Mudkiluvai	<i>Commiphora berryi</i>	B.Urseraceae	Leaves, resin	Anti-rheumatic, antibacterial, antioxidant and antiseptic
91	Katkiluvai	<i>Commiphora caudata</i>	Myrrh Burseraceae	Leaves, fruit	Cure arthritis; hyperlipidemia, pain, healing of wounds, coronary artery diseases.
92	Naruvili	<i>Cordia Domestica</i>	Boraginaceae	Leaves, fruit	cure fever, diarrhea, leprosy and burning sensation.
93	Mavilangai	<i>Crataeva religiosa</i>	Burseraceae	Leaf, bark, fruit	Cure urinary disorders, kidney stone remover.
No	Common name/ Local name (Tamil)	Botanical name	Family	Morphology of parts used	Medicinal use
94	Kalvalai	<i>Crinum asiaticum</i>	Amaryllideae	Leaves, bulb	Treat for gastrointestinal disorders, skin diseases, fever, earache, boils, tonsillitis, mumps, hernia, rheumatism and urinary troubles.
95	Mankainchi	<i>Curcuma amada</i>	Zingiberaceae	Rhizome	Relieve cold and cough.
96	Manjal	<i>Curcuma domestica</i>	Zingiberaceae	Rhizome	Relieve coughs, diabetes, dermatological conditions and respiratory problems.
97	Thuthumakoththan	<i>Cuscuta chinensis</i>	Convolvulaceae	Whole plant	Cure cardiovascular diseases, osteoporosis, lowerabdominal and back pain and infertility.
98	Panam katalalai	<i>Cymbidium bicolor</i>	Orchidaceae	Leaves	Cure eye, ear pain, headache and fatigue
99	Elamichchai	<i>Cymbopogon citratus</i>	Gramineae	Leaves	Analgesic, anti-rheumatic, anti-septic and treatment for nervous and gastrointestinal disorders.
100	Arukampull	<i>Cynodon dactylon</i>	Gramineae	Leaves	Use as laxative, coolant, expectorant and as a brain and heart tonic.
101	Korai	<i>Cyperus rotundus</i>	Cyperaceae	Yam	Anti-piles, anti-bacterial and stomach and bowel disorders.
102	Vellipparuththi	<i>Daemia extensa</i>	Asclepiadaceae	Leaf, fruit	Cure rheumatism arthritis.
103	Kodi sampange	<i>Daemia odoratissimus</i>	Asclepiadaceae	Flower	Tincture of flower relieve indigestion and constipation.
104	Poomatthai	<i>Datura stramonium</i>	Solanaceae	Leaf, flower	Cure ulcers, inflammation, rheumatism and swellings.
105	Vathanaarani	<i>Delonix elata</i>	Leguminosae	Leaf, bark, root	Cure rheumatism and stomach disorders. Anti-inflammatory.
106	Elumpurukki	<i>Delonix regia</i>	Leguminosae	Flower, leaf, Bark	Cure constipation, inflammation, rheumatoid arthritis, diabetes

Tbale 1: Continued

107	Punggu	<i>Derris indica</i>	Leguminosae	Leaf, bark, root	Cure cold, cough, diarrhea, leprosy, teeth ulcers, bleeding piles and antiseptic activity.
108	Velam Thegkil	<i>Derris scandens</i>	Leguminosae	Leaf, stem, root	Relieve expectorant, antidyentery and muscle pain treatment.
109	Thegkil	<i>Derris uliginosa</i>	Leguminosae	Root	Laxative, carminative and anti-arthritis treatment
110	Methipavai	<i>Desmodium triflorum</i>	Leguminosae	Leaves	Anti-pyretic, anti-septic, expectorant properties.
111	Vidathtal	<i>Dichorostachys cinerea</i>	Leguminosae	Leaf, bark, root	Cure diarrhea, dysentery, wounds, ulcers and for skin problems.
112	KAddu valli kodi	<i>Dioscorea sp.</i>	Dioscoreaceae	Yam	Laxative, dysentery, headaches, toothaches, elephantiasis, snakebites, leprosy and coughs
113	Virali	<i>Dodonaea viscosa / Dodonaceae viscosa</i>	Sapindaceae	Leaf, flower	Cure piles, dysentery, syphilis, ulcers, cough, leprosy, diabetes, asthma and cancer. Use for contraceptives.
114	Kurincha	<i>Dregea volubilis</i>	Asclepiadaceae	Leaves	Cure sore throats; colds and rheumatism.
115	Karisalanggani [11]	<i>Eclipta alba</i>	Compositae	Leaves	Relive rheumatic pain, cough, fever and severe cold
116	Mulu nelli	<i>Emblica officinalis / Phyllanthus</i>	Euphorbiaceae	Fruits	Cure gastrointestinal disorders, respiratory tract disorders, fever, hair loss and graying of hair.
117	Vellaruku	<i>Enicostema verticillare / E.littorale</i>	Gentianaceae	Whole plant	Anti-oxidant, immune modulatory, anti-pyretic, analgesic, anti-ulcer and anti-inflammatory
118	Nanthiyavaddai	<i>Ervatamia coronaria</i>	Apocyanaceae	flower	Laxative, blood purifier, dropsy, rheumatism, abdominal ulcers, hernia, swellings, itches and insect poisoning
119	Mulmurukku	<i>Erythrina indica</i>	Leguminosae	Leaf, bark, seeds	Used in skin diseases, relieves toothache and vermicide.
120	shangseevi	<i>Eucalyptus sp.</i>	Myrtaceae	Leaves	Nervine sedative, anti-asthmatic, anti-epileptic, anti-septic activities.
121	Naval	<i>Eugenia jambolana</i>	Myrtaceae	Fruit, seed, bark	Cure coughs, colds and congestion. Relieve muscle and joint pain.
122	Sathurakalli	<i>Euphorbia antiqurum</i>	Euphorbiaceae	Whole plant	Relieve diabetic, anti-diarrhea and constipation.
123	Amman pachcharici	<i>Euphorbia hirta</i>	Euphorbiaceae	Leaf, stem, flower	Cure inflammation, arthritis, wounds, stomach ache and diabetes
124	Ellaipatti	<i>Euphorbia pulcherrima</i>	Euphorbiaceae	Leaf, stem, flower	Relieve respiratory ailments, worm infestations, dysentery, pimples, digestive problems.
125	Chithrapalavi	<i>Euphorbia thymifolia</i>	Euphorbiaceae	Whole plant	Cure fever, anti-bacteria, vermicide.
126	Kodickalli	<i>Euphorbia tirucalli</i>	Euphorbiaceae	Whole plant	Use as blood purifier, sedative, hemostatic, diarrhea & laxative.
No	Common name/ Local name (Tamil)	Botanical name	Family	Morphology of parts used	Medicinal use
127	Elaickalli	<i>Eurya japonica</i>	Euphorbiaceae	Whole plant	Cure rheumatism, cough, asthma, ear-ache, tooth-ache
128	Vishnukiranthi	<i>Evolvulus alsinoides</i>	Convolvulaceae	Whole plant	Cure ulcers, anti-apoptotic, anti-angiogenic and anti-cancer
130	Thillai	<i>Excoecaria agallocha</i>	Euphorbiaceae	Bark, fruit	Cure fever, cough and cold and depression.
131	Vezamaram	<i>Feronia elephantum</i>	Rutaceae	Fruit, leaf	Cure epilepsy, ulcers, leprosy, rheumatism and paralysis
132	Aal	<i>Ficus benghalensis</i>	Urticaceae	Bark, fruit	Cures cough, dysentery, heart diseases & vomiting.
133	Aththi	<i>Ficus glomerata</i>	Urticaceae	Leaf, fruit	Cures cough, dysentery, heart diseases & vomiting.
134	Arasu	<i>Ficus religiosa</i>	Urticaceae	Leaf, bark	Tincture relieves diabolic, stomach pain and leprosy.
135	Manallickeerai	<i>Gisekia pharnacioides</i>	Aizoaceae	Whole plant	cure constipation, diarrhea, dysentery, spongy gums, ulcers, diabetes, asthma, leucorrhoea & urinary problems.
136	Kasantharai	<i>Glinus oppositifolius</i>	Aizoaceae	Whole plant	Cure cough, skin diseases, nausea, vomiting & diarrhea
137	Seemai kluvai	<i>Gliricida sepium</i>	Leguminosae	Leaf	Cure diarrhea, asthma & warts
138	Karthikaippoo kodi	<i>Gloriosa superba</i>	Rhizome	leaf	Cure joint pains, inflammation, diarrhea, fever & skin disorders
139	Kumil	<i>Gmaelina asiatica</i>	Verbanaceae	Leaf, bark, root	Cure boils, burns, colds, cough, fever, itch and prickly heat.
140	Paruththi	<i>Gossypium herbaceum</i>	Malvaceae	Leaf, seeds, root	Cure infertility, snakebite, ulcers, arthritis and leprosy.
141	Cerukurncha	<i>Gymnema sylvestre</i>	Asclepiadaceae	Leaves	Cure rheumatic swellings, wounds, bronchitis and asthma.
142	Thayervallai	<i>Gynandropsis pentaphylla</i>	Capparidaceae	Leaf, flower, root	Cure gastroenteritis, dysentery, intermittent fever and fibroids.
143	Chaya	<i>Hedyotis auricularia</i>	Rubiaceae	Leaf, root	Control diabetes, metabolic syndrome, weight loss and cough.
144	Kaddu patpadakam	<i>Hedyotis corymbosa</i>	Rubiaceae	Leaf	Cure fever, rheumatism & eye pain. Increase red blood cells
145	Empural	<i>Hedyotis puberia</i>	Rubiaceae	Leaf	Anti-dysenteric, anti-diarrhea and lowering blood pressure.
146	Sooriakanthi	<i>Helianthus annus</i>	Compositae	Seeds	Cure appendicitis, hepatitis, urinary infection, cellulites and snake bite.
147	Aanaivanangi	<i>Heliotropium indicum</i>	Boraginaceae	Whole plants	Tincture relieves asthma, cough and nose bleeding.
148	Nanari	<i>Hemidesmus indicus</i>	Periplocaceae	Root	Anti-septic, bactericidal, expectorant, bronchitis & fever
149	Paeramaddi	<i>Hibiscus micranthus</i>	Malvaceae	Leaves	Cure warts, inflammations and tumors.
150	Chefvarathtai	<i>Hibiscus rosasinensis</i>	Malvaceae	Leaf, flower	Anti-pyretic, cure leprosy, skin diseases, fever, asthma, bronchitis and rheumatism.
151	Kasithumpai	<i>Impatiens balsamina</i>	Balsaminaceae	Leaf, flower	Cure ear problems, venomous stings and stomach troubles
152	Sivanar vempoo	<i>Indigofera aspalathoides</i>	Leguminosae	Whole plant	Cure wounds, fever, coughs, diabetes, hair loss & gastric ulcers.
153	Chepunerenchi	<i>Indigofera euneaphylla</i>	Leguminosae	Whole plant	Cure rheumatism, fracture, warts, snakebite and burns.
154	Neelam	<i>Indigofera tinctoria</i>	Leguminosae	Whole plant	Cure leprosy, syphilis, wounds and various skin diseases
155	Kangkun keerai	<i>Ipomoea aquatica</i>	Convolvulaceae	Leaves	Used as anti-scorbutic and diuretic, burns and epilepsy.
156	Adampan kodi	<i>Ipomoea pescaprae</i>	Convolvulaceae	Leaves	Used to clean the liver, detoxify the blood, reduce inflammation and reduce fever
157	Puligkali	<i>Ipomoea pestigridis</i>	Convolvulaceae	Whole plant	Cure piles, nosebleeds and to treat high blood pressure.
158	Kodi mallikai	<i>Jasminum sambac</i>	Oleaceae	Flower	Cure skin affections, ulcers, boils, swellings and wounds
159	Kadamanaku	<i>Jatropha curcas</i>	Euphorbiaceae	Leaf, seeds	Used as an antidote to dog bite, boils and carbuncles

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160	Aathalai	<i>Jatropha glandulifera</i>	Euphorbiaceae	Root, seeds, leaf	Anti-rheumatic, anti-paralytic, Cure ringworm and chronic ulcers.
161	Eliamanaku	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Leaf,	Cure heart problems, diarrhea, wounds, ringworm, eczema, stomach ache and indigestion
162	Veli moongil	<i>Justicia betonica</i>	Acanthaceae.	Leaf	Cure snake-bite, boils, diarrhea and scaly skin.
163	Karu nochchi	<i>Justicia gendarusa</i>	Acanthaceae.	Leaf	Cure chronic rheumatism, headache, earache, fever, cough and inflammation.
No	Common name/ Local name (Tamil)	Botanical name	Family	Morphology of parts used	Medicinal use
164	Naga malikai	<i>Justicia nasuta</i>	Acanthaceae.	Whole plant	Cure eczema, herpes, tuberculosis, hepatitis, diabetes, hypertension
165	Kodakasalai	<i>Justicia procumbens</i>	Acanthaceae.	Whole plant	Cure asthma, cough, backache, flatulence and skin conditions
166	Kachcholam	<i>Kaempferia galanga</i>	Zingiberaceae	Leaf, root	Anti-microbial, anti-oxidant and anti-tuberculosis and anti-dengue activities.
167	Othi	<i>Lannea grandis</i>	Anacardiaceae	Leaf, bark	Cure treat fever, dysentery, sore eyes, leprosy, sprains, ulcers, inflammations and wounds.
168	Naiuni	<i>Lantana camara</i>	Verbanaceae	Leaves	Cure malaria, chickenpox, asthma, ulcer, eczema, tumor and fever.
169	Maruthonri	<i>Lawsonia inermis</i>	Lythraceae	Leaves	Anti-bacterial, anti-fungal activities, cure dysentery, diarrhea and sore throats
170	Mdithumpai	<i>Leucas zeylanica</i>	Labiatae	Whole plant	Cure inflammatory conditions, skin diseases wounds, sores, itches and headaches
171	Poduthalai	<i>Lippia nodiflora</i>	Verbenaceae	Whole plant	Cure bronchitis, respiratory diseases, arthritis, fever, hookworm and gonorrhea.
172	Kuruvichchai	<i>Loranthus falcatus</i>	Loranthaceae	Leaves	Cure tuberculosis, asthma and menstrual disorders
173	Palaikodi	<i>Marsdenia tenacissima</i>	Asclepiadaceae	Leaf, roots	Cure asthma, tonsillitis and cancer.
174	Shanpaka maram	<i>Michelia champac</i>	Magnoliaceae	Leaf, bark, flower	Cure diarrhea, cough, bronchitis, hypertension and fever
175	Thodarchurunge	<i>Mimosa pudica</i>	Leguminosae	Whole plant	Cure urogenital disorders, piles, dysentery, sinus and antibacterial
176	Mogil	<i>Mimusops elengi</i>	Sapotaceae	Bark, flower, fruit	Cure bleeding gums, pyorrhea, dental caries and loose teeth
177	Patpadakam	<i>Mollugo cerviana</i>	Alzoaceae	Whole plant	Treat fever, stomach ache, jaundice, gout and rheumatism.
178	Pakal	<i>Momordica charantia</i>	Cucurbitaceae	Fruit	Used for cancer, diabetes and HIV/AIDS
179	Manjavanna	<i>Morinda tinctoria</i>	Rubiaceae	Leaf, flower, fruit	Anti-bacterial, analgesic, anti-oxidant, anti-inflammatory, laxative and hypotensive.
180	Kari murungai	<i>Moringa oleifera</i>	Moringaceae	Leaves, roots, seed, bark, fruit, flowers	Anti-tumor, anti-pyretic, anti-inflammatory and antidiabetic activities
181	Jam maram	<i>Muntingia calabura</i>	Tiliaceae	Leaf, flower, bark	Anti-septic, cure swellings, gastric ulcer, prostate gland, headache and cold.
182	Kariveppilai	<i>Murraya koenigii</i>	Rutaceae	Leaf, bark, root	Cure inflammation, itching, fresh cuts, dysentery and bruises
183	Sampirani	<i>Myroxylon balsamum</i>	Leguminosae	Leaf, fruit	Cure asthma, colds, flu, rheumatism and external wounds
184	Thamarai	<i>Nelumbium nuciferum</i>	Nymphaeaceae	Leaf, flower, Rhizome	Cure hematemesis, epistaxis, lowering blood sugar levels, diarrhea, fever and hyperdipsia
185	Alari	<i>Nerium odorum / N.oleander</i>	Apocyanaceae	Leaf, flower, root	Treating ulcers, hemorrhoids, leprosy, ringworm & abscesses.
186	Neelotpalam	<i>Nymphaea stellata</i>	Nymphaeaceae	Leaf, flower, Rhizome	Cure diabetes, inflammation, liver disorders, urinary disorders
187	Thiruneethupachcai	<i>Ocimum basilicum</i>	Labiatae	Leaf, flower	Cure headaches, coughs, diarrhea, constipation and kidney malfunctions.
188	Kanchankorai	<i>Ocimum canum</i> and <i>O.gratissimum</i>	Labiatae	Whole plants	Control diabetes, colds, fevers, kidney stones and cramp pain
189	Thulasi and skin diseases.	<i>Ocimum sanctum</i>	Labiatae	Whole plant	Cure bronchitis, bronchial asthma, malaria, diarrhea, dysentery
190	Nagathali	<i>Opuntia dillenii</i>	Cactaceae	Stem, fruit	Anti-inflammatory, anti-diabetic, anti-viral properties
191	Kodipuliyarai and traumatic injuries	<i>Oxalis corniculata</i>	Oxalidaceae	Whole plant	Cure influenza, fever, urinary tract infections, enteritis, diarrhea
192	Palikodi	<i>Oxystelma esculentum</i>	Asclepiadaceae	Whole plant	Cure cancer, hepatitis, kidney disorders and microbial infections.
193	Pavaddai	<i>Pavetta indica</i>	Rubiaceae	Whole plant	Cure inflammation, rheumatism, jaundice and ulcer.
194	Ananai nerunchi	<i>Petalium murex</i>	Pedalaceae	Whole plant	Treat digestive, carminative, tonic & spasmodic affections
195	Narippayaru	<i>Phaseolus trilobus</i>	Leguminosae	Whole plant	Cure gastritis, neuropathy, fever and worm infestation
196	Arai nelli	<i>Phyllanthus distichus</i>	Euphorbiaceae	Whole plant	Treat for diarrhea, jaundice and inflammation.
No	Common name/ Local name (Tamil)	Botanical name	Family	Morphology of parts used	Medicinal use
197	Kerkainelli	<i>Phyllanthus niruri</i>	Euphorbiaceae	Whole plant	Cure jaundice, gonorrhea, frequent menstruation, diabetes, skin ulcers, sores, swelling and itchiness.
198	Pullanthi	<i>Phyllanthus reticulatus</i>	Euphorbiaceae	Whole plant	Cure asthma, inflammation, show anti-diabetic, anti-viral, anti-cancer, anti-bacterial and anti-inflammatory activities.
199	Manath thakali	<i>Physalis minima</i>	Solanaceae	Whole plant	Cure headache, itches, earache, fever, hypertension and diabetes. Anti-cancerous, anti-diabetic, analgesic activities.
200	Vettilai	<i>Piper betel</i>	Piperaceae	Leaves	Anti-bacterial, anti-fungal, anti-septic effects. Cure wounds, ulcers, boils, bruises, cough, asthma and relieve constipation
201	Aahayathamarai	<i>Pistia stratiotes</i>	Aroidaceae	Whole plant	Cure eczema, leprosy, ulcers, piles, stomach disorder, throat and mouth inflammation
202	Chithramoolam	<i>Plumbago zeylanica</i>	Plumbaginaceae	Whole plant	Cure rheumatoid arthritis, skin diseases and tumorous growths

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203	Thema	<i>Plumeria acuminata</i>	Apocyanaceae	Leaf, bark, root	Cure fever, diarrhea, itch and inflammation.
204	Parupukeerai	<i>Portulaca oleracea</i>	Portulacaceae	Whole plant	Anti-septic, antibacterial, anti-inflammatory and wound-healing properties
205	Kovothi	<i>Psoralea corylifolia</i>	Papilionaceae	Whole plant	Cure leukoderma, asthma, ulcers, kidney disorders and an anti-inflammatory action.
206	Mathulai	<i>Punica granatum</i>	Punicaceae	Flower, fruit	Treat cancer, osteoarthritis, sore throats, coughs, urinary infections, digestive disorders, skin disorders, arthritis and to expel tapeworms.
207	Rangoon malikai	<i>Quisqualis indica</i>	Combretaceae	Whole plant	Treat for ascarids, vermifuge, nephritis, diarrhea, rheumatism boils and ulcer.
208	Sharpakantha	<i>Rauwolfia tetraphylla</i>	Apocynaceae	Whole plant	Remedy for snake and other poisonous bite, blood pressure, diabetes, piles, malaria, wound, cough and fever
209	Aamanaku	<i>Ricinus communis</i>	Euphorbiaceae	Leaf, seeds	Cure abdominal disorders, arthritis, backache, muscle aches, constipation and rheumatism
210	Musuddai	<i>Rivea ornata</i>	Convolvulaceae	Leaf, root	Treat cough, headache, skin disease, malaria and burns
211	Pampukatriai	<i>Sansevieria zeylanica</i>	Haemodoraceae	Rhizome, root	Anti-septic, antifungal activities, cure septic wounds and fever
212	Ellu	<i>Sesamum orientale</i>	Pedaliaceae	Whole plant	Cure cholera, diarrhea, dysentery, catarrh, bladder troubles, stiff joints, dry cough, hemorrhoids and ulcers
213	Akaththi	<i>Sesbania grandiflora</i>	Leguminosae	Whole plant	Cure sprains, bruises, swellings, rheumatism, itching, diarrhea, colic, dysentery, diabetes, fever, sinus congestion and malaria.
214	Vangaravalli	<i>Sesuvium portulacastrum</i>	Aizoaceae	Whole plant	Anti-bacterial, anti-fungal as well as anti-oxidant activity, antidote for stings of venomous fish
215	Malaithangi	<i>Sida acuta</i>	Malvaceae	Whole plant	Remedy rheumatic affections, wounds, nervous and heart diseases.
216	Manithagkali	<i>Solanum nigrum</i>	Solanaceae	Leaf, fruit	Treat pneumonia, aching teeth, stomach ache, tonsillitis, wing worms, pain, inflammation and fever, tumor, inflammation
217	Chundangkathari	<i>Solanum torvum</i>	Solanaceae	Leaf, fruit	Treat fevers, coughs, asthma, chest ailments, sore throats, rheumatism and stomach aches
218	Thutuvulai	<i>Solanum trilobatum</i>	Solanaceae	Leaf, stem, flower, fruit	Anti-bacterial, anti-fungal properties. Cure asthma; vomiting of blood; rheumatism and fever
219	Kandangkathari	<i>Solanum xanthocarpum</i>	Solanaceae	Leaf, stem, flower, fruit	Cure bronchitis, asthma, fever, antioxidant, anticancer and anti- HIV
220	Nathaisoori	<i>Spermacoce hispida</i>	Rubiaceae	Whole plant	Cure stomach ailments, anti-dandruff, boils, eruptions, swellings and coughs
221	Sivakaranthai	<i>Sphaeranthus amaranthoides</i>	Tubulifloatae	Whole plant	Cure eczema, blood disorders, stomach worms, fever, skin diseases and jaundice.
No	Common name/ Local name (Tamil)	Botanical name	Family	Morphology of parts used	Medicinal use
222	Paral	<i>Streblus asper</i>	Urticaceae	Leaf, bark, fruit	Remedy for filariasis, leprosy, toothache, diarrhea, dysentery and cancer.
223	Kanchurai	<i>Strychnos nux - vomica</i>	Loganiaceae	Bark, seeds	Treatment of neuro disorders, arthritis and vomiting
224	Thetangkodai	<i>Strychnos potatorum</i>	Loganiaceae	Leaf, root, seed	Treat for kidneys and stomach; bronchitis, chronic diarrhea, kidney and bladder stones, diabetes & eye diseases
225	Puli	<i>Tamarindus indica</i>	Leguminosae	Leaf, flower, fruit, seeds, bark	Cure wound healing, abdominal pain, diarrhea, dysentery, parasitic infestation, fever, malaria and respiratory problems
226	Poovarasu	<i>Thespesia populnea</i>	Malvaceae	Leaf, flower, bark	Cure scabies, dysentery, hemorrhoids, colds and diabetes
227	Seenthil	<i>Tinospora cordifolia</i>	Menispermaceae	Whole plant	Cure diabetes, high cholesterol, hay fever, upset stomach, lymphoma, cancers, rheumatoid arthritis, hepatitis and fever,
228	Kaddu melaku	<i>Toddalia asiatica</i>	Rutaceae	Fruit, root, bark	Cure cough, indigestion, influenza, fever, malaria, cholera, diarrhea and rheumatism.
229	Kanshondi	<i>Tragia involucrata</i>	Euphorbiaceae	Whole plant	Treat inflammation, wounds, eczema, scabies, bronchitis and skin infections.
230	Saranai	<i>Trianthema portulacastrum</i>	Aizoaceae	Whole plant	Cure asthma, jaundice, rheumatism and night blindness.
231	Nerunji	<i>Tribulus terrestris</i>	Zygophyllaceae	Whole plant	Remedy for kidney stones, low blood pressure, cardiovascular diseases, gastrointestinal disorders and hepatitis.
232	Paipudol	<i>Trichosanthes cucumerina</i>	Cucubitaceae	Fruit	Cure headache, fever, abdominal tumors, boils and diarrhea.
233	Palaikodi	<i>Tylophora flava</i>	Asclepiadaceae	Leaf, flower	Cure allergies, asthma, cancer, constipation, cough, diarrhea and jaundice
234	Nari vengkayam	<i>Urginea indica</i>	Lillaceae	Bulb	Cure Cough, Warts, Asthma, Leprosy, Menstrual troubles, Urinary problems, Kidney disorders and Rheumatism.
235	Seedeviar chengkluneer	<i>Vernonia cinerea</i>	Compositae	Whole plant	Cure inflammation, diarrhea, cough, smoking cessation, asthma, Parkinson's disease and leprosy
236	Nochchi	<i>Vitex negundo</i>	Verbenaceae	Leaf, fruit, root	Cure bronchitis, swellings, rheumatism, ulcers, sinuses and headache,
237	Veddapalai	<i>Wrightia tinctorial</i>	Apocyanaceae	Leaf, bark, seed	Cure dysentery, dropsy, fevers, diarrhea and dysentery
238	Marulumathai	<i>Xanthium strumarium</i>	Compositae	Leaf, fruit, root	Anti-bacterial, anti-fungal, anti-inflammatory, anti-malarial and anti-rheumatic activities.
239	Inchi	<i>Zingiber officinale</i>	Zingiberaceae	Rhizome	Cure allergic rhinitis, sinusitis, catarrh, rheumatism, rheumatoid arthritis, constipation, diarrhea and leprosy
240	Elanthai	<i>Zizyphus jujuba</i>	Rhamnaceae	Fruit	Cure nausea, dysentery, heartburn, diarrhea, loss of appetite, infections, cough and bronchitis.
					Treat to increase strength, stimulate appetite and enhance liver health.

DISCUSSION

The survey of medicinal plants was done in four zones of Jaffna peninsula and 240 important medicinal plants were observed and listed in this study. This is the first survey on medicinal plants in Jaffna peninsula. The plants were reported with its common/vernacular name, morphology of parts used, family and its medicinal/commercial properties. The people of Jaffna use different morphological useful parts such as leaves, flowers, bark, fruit, stem for their health care. These collected medicinal plants are used for the treatment of several diseases like dengue fever, skin diseases, knee pain, kidney stones, digestive problem, hemorrhage etc. [13-16].

The major resources of medicines are arising from plants and their phytochemical constituents. The phytochemical constituents and medicinal properties of most of the medicinal plants were recorded in the last few decades by a number of workers. These medicinal plants are subjected to various processes and are then administered to the patients. The survey and documentation of medicinal and aromatic plants in each and every place is mandatory for easy identification of local traditional healers, conservation and sustainable utilization. The most important utilization of these plants is through medicines. However, plants and their parts and the pattern of administration vary from person to person. Thus, there is enormous scope for tribal medicines based on plant products which are yet to be studied, analyzed and documented.

The issues of medicinal plant conservation have been the focus of many formal and informal discussions at national and international forums, seminars, workshops, conferences and congresses in the last 10 years. Various conservation methods that were mentioned in the past by many authors are being repeated at present. These methods include protection of wild species in-situ and ex-situ conservation in botanical gardens and collection of germplasm for establishment of germplasm banks, public information campaigns and others.

Sri Lanka and India are the best of the treasure houses of medicinal plants in the world. These medicinal plants were used to treat various diseases and ailments. The survey of medicinal plants in particular areas is important to conserve the traditionally important plants of such a landscape. This paper revealed the medicinal plants of Jaffna peninsula and their importance. Surveys and field visits are being carried out to record the medicinal plants and their importance were recorded.

In this study 240 plants were recorded. Medicinal plants of various regions in the world can be recorded by many researchers so far, but this is the first attempt to record medicinal plants in Jaffna peninsula. This appears to be the first paper to report the traditional medicinal plants of Jaffna peninsula, Sri Lanka. There are plenty of possible applications of this work both for use in the treatment of various diseases among the rural people. The village people are using these plants from several thousands of years till today to treat many infectious and non-infectious diseases. Besides this another important application of this study is to create awareness among the rural people on traditional medicinal plants. The present investigation is very important because the herbal drugs are free from toxicity and side effects. The herbal drugs are also used as household remedy for common diseases since time immemorial. The present study mainly focuses on the importance, uses and conservation of the medicinal plants used by the people of Jaffna peninsula.

ACKNOWLEDGEMENTS

The authors are cordially grateful to the people inhabiting the Jaffna peninsula because of their kind support and co-operation during the field trips and also thankful to the Department of Botany, University of Jaffna.

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