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An ethno botanical survey of medicinal plants in Sillalai, Jaffna, Northern Province, Sri Lanka

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Abstract

An ethno botanical survey was undertaken to record information on medicinal plants from traditional medical practitioners (TMP's) in Sillalai, Jaffna and to identify the medicinal plants used for treating diseases. TMP's who were the main informants were interviewed using semi-structured questionnaires and open-ended conversations. Field trips were made to the sites where TMP's harvest plants. The survey identified and recorded 300 plants species from 27 plant families, used for treating diseases in Sillalai, Jaffna. The Leguminaceae was the most represented plant family while medicinal plants used. The leaf was the most commonly used plant part while concoction and decoction were the most common method of traditional drug preparation. Most medicinal plants (52.7%) are harvested from the wild and commonly available, 27.3% of medicinal plants were cultivated selected areas, 20% rarely present and 0.3% identified first time in Sri Lanka. Knowledge of the use of plants as medicines remains mostly with the older generation with few youth showing an interest. First identified plant was confirmed by a taxonomist. A huge number of plants species are used for treating different diseases in Sillalai, Jaffna. The conventional ethno medicinal plants were mostly used for fever, dysentery, skin diseases, poison bites, wounds, piles, Diabetes Mellitus and rheumatism.

Keywords: Medicinal plants, traditional healers, chemical constituents.

1. Introduction

Human and Animals live in equilibrium with the natural plants surrounding them, using these plants as sources of food and intuitively or through years of trials and error, as medicine. Traditional medicine refers to health practices, knowledge and beliefs incorporating plants, animals and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being [1, 2, 27, 43].

According to the WHO, about 80% of the population of the world depends on traditional medicine, mostly herbal remedies, for their primary health care needs [3, 24]. A medicinal plant is any plant, which in one or more of its organs contains active ingredients which can be used for therapeutic purposes or contain foundation compounds that can be used for the synthesis of useful drugs [36]. The absence or inaccessibility of modern healthcare services, affordability, and cultural acceptance under certain circumstances, effectiveness than their modern counterparts has caused a large percentage of the population to rely mostly on plant based traditional medicines for their primary health care needs. These factors and a growing interest in the use of natural products and folk medicine have resulted to an increase in the demand for medicinal plants [42]. This increase in demand puts a threat on natural resources. Knowledge on the use of medicinal plants is enormous but if this is not rapidly researched and recorded, indications are that it will be lost with succeeding generations [17].

Medicinal plant is defined as any substance with one or more of its organ containing substances that can be used for therapeutic purposes or which can be used as precursors for the synthesis of antimicrobial drugs [37, 38]. It is estimated that there are about 250,000 – 500,000 species of plants on earth [4], of which a relatively small percentage (1-10%) of these are used for

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food by humans and animals. It is possible that more serve medicinal purposes [23] of which a relatively small percentage (1-10%) of these are used for food by humans and animals. It is possible that more serve medicinal purposes [23]. Medicinal plants contain numerous biologically active compounds such as carbohydrates, proteins, enzymes, fats and oils, minerals, vitamins, alkaloids, quinones, terpenoids, flavonoids, carotenoids, sterols, simple phenolic glycosides, tannins, saponins, polyphenols, to mention a few which have medicinal activities.

Therefore the documentation of the traditional therapeutic know-how could lead to the discovery of new drugs as well as contribute to the conservation, sustainable management and use of plant resources. Ethnobotanical investigations have been reported for parts of Northern Province of Sri Lanka but no investigation has ever been carried out in Sillalai, Jaffna. It is therefore necessary to carry out a survey to document the plants used for medicinal purposes in Sillalai, Jaffna.

2. Materials and methods

2.1 Study site: he study was carried out in Sillalai, Jaffna, located in the place is situated in Northern Province, Sri Lanka, its geographical coordinates are 9°47'0" North latitude and 79°57'0" East longitude and its original name (with diacritics) is Sillalai. It is distanced approximately 16 km from Jaffna and 2 km from Pandateruppu. It is bounded on the North by Mathagal, on the East by Pandateruppu, on the South by Chulipuram and on the West by part of the Mathagal coasted area. The area has rich soil and bright sunlight, and important natural resources which are abundantly available in this region and responsible for the development of rich vegetation having variable medicinal properties [14].

Geographical coordinates: 9°47'0" North, 79°57'0" East [14]

Geographical location: Northern, Sri Lanka, Asia [14]

Original name: Sillalai (figure. 1, 2)

In Sillalai mostly peasant farmers who grow vegetables, rice and betel as cash crops and some deal with fishing also.



Fig 1: Location of Sillalai, Jaffna in Sri Lanka [14]



Fig 2: Location of Sillalai, Jaffna in Sri Lanka [14]

2.2 Data collection

In order to assess the consumption of indigenous medicinal plants, survey was carried out during the year, 2012 in the areas of Sillalai, Jaffna district in Northern Province, Sri Lanka. To get maximum information the survey was widened diagonally during the following rainy season.

Sillalai have so many famous Traditional Medical Practitioners in twenty years ago. Their families and generations are displaced to

other station for various reasons therefore Traditional Medical Practitioners (TMP's) generations were the main informants in the survey. The information on medicinal uses of the indigenous plants has been described after gathering it from local people, experienced aged rural folk, traditional herbal medicine practitioners, local herbal drug sellers and the information collected from the available literature. A total of 215 inhabitants were interviewed. Randomly people were selected of which 110 men and 105 women of age 35

and above were interviewed in their local language, that is, Tamil. In addition, direct plant observation and identification was done with the help of local healers known as 'Maruthuvar'. Author also as a Doctor and have enough knowledge about medicinal plants in Sri Lanka. Plants recorded in the results were mentioned by at least two TMP's as treating the same disease in order to confirm its use. Fertile specimens of the plants were collected in the field using standard botanic methods [31]. Together with the TMP's. The collected specimens were identified at the National Herbarium in Royal Botanical Garden, Peradeniya, Sri Lanka and voucher specimens were deposited at the herbarium of the Royal Botanic Garden, Sri Lanka. Voucher specimen numbers along with other details are given in and the collected data contains the list of plants of different families with their traditional uses, plant parts used and their mode of administration which are listed in alphabetical order.

3. Results & Discussion

A total of 300 medicinal plant species from 27 families 60 rare medicinal plants and 01 first identified Medicinal plant in Sri Lanka used for treating most of all health problems were identified in the survey. The most represented plant family in the list of medicinal plants is the Leguminosae with 29.6% of the medicinal plants species followed by Euphorbiaceae, Malvaceae and Moraceae with 18.5% each.

Identified plants Families are: Acanthaceae, Amaranthaceae, Anacardiaceae, Apocynaceae, Asclepiadaceae, Asteraceae, Burseraceae, Caricaceae, Cucurbitaceae, Euphorbiaceae, Labiatae, Leguminosae, Liliaceae, Lythraceae, Malvaceae, Meliaceae, Menispermaceae, Mimosaceae, Moraceae, Nyctaginaceae, Papaveraceae, Poaceae, Rubiaceae, Rutaceae, Sapindaceae, Verbenaceae, and Zingiberaceae.

Major chemical constituents for few medicinal plants as follows

1. *Abutilon indicum* Don. Sweet (SI/J/NP/SL/mal/002) Malvaceae Thuthi Alkaloids, flavonoids, sterols, triterpenoids, glycosides and water soluble galactomannan have been isolated from leaves, stem, root bark and seeds (Vandana Sii *et al.*, 1997).
2. *Aristolochia bracteolata* Lam. (SI/J/NP/SL/ari/001) Aristolochiaceae Atuthendapalai Aristolochin, aristolochic acid alkaloids extracted from leaves.
3. *Atalantia monophylla* Corr. (SI/J/NP/SL/rut/001) Rutaceae Kattu elemitchai Atalaphylline and Atalaphyllinine alkaloids extracted from the root bark (Gururaj *et al.*, 1981). Limonoids, atalantin and the others, dehydroatalantin and cycloepitalantin were obtained by Dreyer *et al.* (1976).
4. *Abrus precatorius* Linn. (SI/J/NP/SL/fab/001) Fabaceae Kuntrimani Toxic lectin and abrin agglutinin from the seeds and two triterpenoid saponins 1 and 2 were isolated from the aerial parts of the plant (Albert *et al.*, 2001; Anam, 2001). The sweet-tasting oleanane glycoside, glycyrrhizin and cycloartane glycosides, namely abrusosides A-E were extracted from it leaves (Choi *et al.*, 1989). Two new alkaloids methyl ester of N, N-dimethyltryptophan etho cation and precatorine and addition, hypaphorine, choline and trigonelline were isolated from the seeds (Ghosal & Dutta, 1971).
5. *Asparagus racemosus* Wild (SI/J/NP/SL/lil/003) Liliaceae, Thaneervittan kilangu, Asparinins, asparosides, curillins, curillosides and shavatarins have been isolated

from the root (Patricia *et al.*, 2006). (Sankaranarayanan, 2008)

The total number of medicinal plants followed by trees (22.7%), shrubs (19.7%), and climbers making up the remaining 15%. The leaves were the most commonly used plant part followed by the aerial parts of herbs (30.7%), Creepers-7.3%, Cacti-1.3%, Aquatic plants -2.3% and parasitic plants- 1%

Whole plant -31%, Root - 37.7%, Leaves-53.7%, Seed-14%, Fruit-15.7%, Bark-6.7%, Bulb-1%, Stem-0.7%, Oil-3.3%, Salt-1%, Flower-3%, Latex-1.7%, Tuber-5.3% and Rhizome-2.3% were plant parts used in medical preparations.

Many plants have multiple medicinal uses and many diseases are treated using a combination of more than one plant. Decoctions were the most common method of preparation and most of the medicines are administered orally with topical administration in the case of skin diseases or wounds.

Medicinal plants were harvested from the wild, from farms and fallows and some home gardens. From the list of medicinal plants, 27.3% are cultivated exclusively for medicinal purposes and domesticated crops and fruits from farms, fallows or grown in compounds (table 3), 52.7% are collected entirely from the wild, 20% are rare medicinal plants and 0.3% (only 01 plant) was identified firstly in Sri Lanka. All of these are medicinal plants. From the responses to the questionnaire, it was provided that medicinal preparations offered for sale are made by infusion, decoction, tincture, macerations, poultices, concoction, powder and pastes for internally or externally. Treatment recipes for some of the common ailments which affect people in the Sillalai, Jaffna are presented below:

1. *Abutilon indicum* Don. Sweet (SI/J/NP/SL/mal/002) The juice of the plant is used for blood dysentery, fever, and allergy. Fried leaves are used as a remedy for jaundice, piles, ulcer and leprosy.
2. *Aristolochia bracteolata* Lam. (SI/J/NP/SL/ari/001) The root powder is combined with honey and is given internally given in the case of syphilis, gonorrhoea, boils, foul ulcers and other skin diseases. The bruised leaf is mixed with castor oil and is applied externally, in obstinate cases of eczema, to children's legs.
3. *Atalantia monophylla* Corr. (SI/J/NP/SL/rut/001) The leaves are boiled with water externally and used for rheumatoid pain and glandular swelling. The essential oil of the fruit is used for joint pain.
4. *Abrus precatorius* Linn. (SI/J/NP/SL/fab/001) The decoction of roots has been used as a folk medicine for diuresis and the relief of fever, sore throat, bronchitis and hepatitis.
5. *Asparagus racemosus* Wild (SI/J/NP/SL/lil/003) The decoction obtained from the root has been used to cure blood diseases, diarrhoea, dysentery, cough, bronchitis and general debility. The root is boiled with cow milk used for increasing milk secretion during lactation.
6. *Achyranthes aspera* Linn. The young shoots of the plant are fried with the bulb of *Allium sativum* and are used along with sesame oil internally in the case of dog bites and other poisonous cases. Burned root ashes are applied on the teeth which are infected with worms for reducing pain and as well as

- to expel the dead worms out. The juice extracted from the leaf is used to treat primary infection of tuberculosis.
7. *Borreria verticillata* (L.) G.F.W. Meyer.
The tea forms of the root decoction are used in the treatment of leucorrhoea and gonorrhoea [44].
 8. *Barleria prionitis*. Linn.
The juice of the leaf is used to treat cataract and fever. The dried bark is used in cough treatment and the leaves are chewed to relieve toothache. The paste of the root is applied to disperse boils and glandular swellings. Leaves are also used by some tribal communities for treatment of piles and to control irritation and stiffness of limbs, enlargement of scrotum and sciatica.
 9. *Boerhaavia diffusa* Linn.
The decoctions of roots are used for the treatment of dyspepsia, jaundice, enlargement of spleen, abdominal pain and as an anti-stress agent.
 10. *Clerodendrum phlomidis* Linn.
The juice of the leaves is used as an alternative and bitter tonic. The decoction of the root is slightly aromatic and astringent and is used as a demulcent in gonorrhoea. It is also given to children during convalescence of measles. The fresh juice of the leaves is used to treat mental tension and mental disturbance.
 11. *Coleus aromaticus* Benth.
The leaf juice is used for the treatment of headache, fever, epilepsy and dyspepsia. The decoction of the leaves is administered in the case of chronic cough and asthma.
 12. *Cissampelos pareira* Linn.
The paste of the root is used as an external application and has the property of wound healing, antidote, fistula, pruritis, skin disorders and snake poison. Internally roots are useful in the case of anorexia, indigestion, abdominal pain, gastric disorders, diarrhoea and dysentery. Traditionally the plant used for blood purification and anti-inflammatory properties.
 13. *Calophyllum inophyllum* Linn.
The oil of the seeds and roots are beneficial in the treatment of wounds and scabies. The plant is also recommended in leprous nephritis.
 14. *Cadaba fruticosa* (L.) Druce.
The leaf juice is internally used in the case of general weakness and energetic during dysentery and diarrhoea and also to relieve general body pain, antidote against poisoning, stimulant, and antiscorbutic.
 15. *Cleome gynandra* Linn.
A decoction or infusion of boiled leaves and/or roots has been administered to facilitate childbirth. Bruised leaves, which are rubefacient and vesicant, are also used to treat neuralgia, rheumatism and other localized pains. Sap from leaves has been used as an analgesic particularly for head ache, epileptic fits and ear ache.
 16. *Cynodon dactylon* Dc.
The juices obtained from leaf are internally useful in blood vomiting. Externally the plant is applied on chronic wounds.
 17. *Dodonaea viscosa* Roxb.
The stem and roots are used for the treatment of rheumatism, skin infections and diarrhoea. The plant decoction is useful in the case of pains of hepatic or splenic origin, uterine colic and other disorders involving smooth muscles. It is also used as an antipruritic in skin rashes and for the treatment of sore throat, dermatitis and haemorrhoids.
 18. *Evolvulus alsinoides* Linn.
The whole plant extracts are used to treat brain disorders like insanity, epilepsy, memory enhancement and nervous debility. The strong decoction is internally used in the case of intermittent fever.
 19. *Elytraria acaulis* Linn.
The whole plant is internally and as well as externally used in the case of deworming.
 20. *Enicostemma littorale* Blume
The decoctions attained from the leaves are used in rheumatism, abdominal ulcers, hernia, swelling, itches and insect poisoning.
 21. *Euphorbia hirta* L.
The decoction of the flowers and fruits are used in the treatment of asthma and respiratory tract infections and sometimes the extracts are combined with bronchial sedatives. The latex is externally applied for wounds.
 22. *Garcinia indica* (Thouars) Choisy
The aerial extract has been used as a pink and purple food colouring agent and as well as a spice to give a sour and sweet taste. In addition to food usage, it has also been used as a cosmetic ingredient, inflammation and other disorders.
 23. *Hibiscus rosa-sinensis* Linn.
The soaked petal along with coconut oil is externally applied for alopecia. The leaves and flowers are observed to be promoters of hair growth and it aids in healing of ulcers.
 24. *Helicteres isora* Linn.
The decoction of the root is mixed with turmeric powder and is applied externally to treat cuts and wounds. The fruit is boiled with sesame oil, cooled and then the filtered oil (2 to 3 drops) is poured into the ear for analgesic disease.
 25. *Ixora coccinea* Linn.
The decoction yielded from the flowers is used in the treatment of dysentery, leucorrhoea, dysmenorrhoea, haemoptysis, bronchitis and scabies.
 26. *Indigofera aspalathoides* Vahl.
The roots soak with coconut oil and they used for chronic eczema, acute tumour, psoriasis. Root is chewed for toothache and abscess.
 27. *Melothria maderaspatana* (L.) Cogn.
The leaf juices are used to treat asthma and allergic. Root extract combined with Cuminum cyminum is used treat spermatorrhea.
 28. *Mimosa pudica* L.
The leaves extracts are used in the treatment of headache, migraine, insomnia, diarrhoea, dysentery, fever, piles and fistula. The leaf and stem has been used in the treatment of scorpion sting. Root popularly used against cobra bite by snake charmers and Bejs. Root powder combine with cow milk used for aphrodisiac.
 29. *Mucuna pruriens* L. DC.
The dried seed is boiled with cow milk, and then the seed is dried in sunshade, after which the seed is powdered and combined with cow milk which is effective in treating male sterility and nervous diseases.

30. *Oroxylum indicum* Linn.
Its seeds decoction have been used as an analgesic, antitussive and anti-inflammatory agent for the treatment of cough and bronchitis.
31. *Phyllanthus niruri* Linn.
Two new securinega-type alkaloids, isobubbialine, epibubbialine and as well as the three known alkaloids, phyllanthine, securinine and norsecurininewere isolated from the leaves.
32. *Piper betle* Linn.
Betel leaves are used for chewing and are credited with many medicinal properties such as digestive, stimulative, carminative and aphrodisiac. The fresh leaves immersed with sesame oil, then warmed with flame is applied for head ache and lactogogue.
33. *Pandanus amaryllifolius* Linn.
Tender shoots are directly eaten in the case of severe jaundice. The oil obtained from the leaf is described as stimulant and antispasmodic and is effective against headaches, rheumatism, and epilepsy and as a cure for sore throats.
34. *Rhinacanthus nasutus* (L.) Kurz
The root powder is combined with lime juice and is applied for ring worm and skin diseases. The leaf extract is externally used for chronic wounds.
35. *Scoparia dulcis* Linn.
The leaf extract is used to treat respiratory, gastric and hepatic disturbances diabetes and hypertension.
36. *Sida cordifolia* Linn.
The leaves are used in for the treatment of stomatitis, blenorrea, asthmatic bronchitis, and nasal congestion (Balbach, 1978). The roots possess diuretic and tonic properties and administered for nervous disorders such as hemiplegia and facial paralysis.
37. *Solanum nigrum* Linn.
The juice taken from fresh leaves are used to treat for stomach ulcer.
38. *Tephrosia purpurea* (Linn.) Pers.
The whole plant has been claimed to cure diseases of kidney, liver, spleen, heart and blood.
39. *Tylophora indica* Linn.
Root decoction is internally used in the case of asthma and expectorant. Leaves decoction are internally used as an antidote to poison.
40. *Thespesia populanea* Cav.
The decoction of the bark is commonly used for the treatment of skin and liver diseases. Oil of the bark mixed with vegetable oil is useful in urethritis and gonorrhoea, the bark and root, decoction used in dysentery, cholera and haemorrhoids.
41. *Trichodesma indicum* R. Br.
The whole plant is used as emollient and diuretic. The roots were used in the treatment of dysentery, cough, cold, fever and joint pain.
42. *Tribulus terrestris* Linn.
The fruit decoction is combined with *Crataeva magna* stem bark internally used in the case of urinary infection and kidney stone disorder.
43. *Withania somnifera* L. Dunal
The root powder boiled with cow milk is internally used for adenopathy, arthritis, asthma, hypertension,

inflammations and rheumatism. The leaves were also used as a cure for several illnesses including tumors, inflammations, conjunctivitis and tuberculosis.

44. *Zingiber officinale*. Roscoe
The fresh juice taken from ginger is internally useful in the case of indigestion and liver diseases. Dried ginger is boiled with palm sugar candy and is internally useful in the case of chronic cough and cold. (Sankaranarayanan, 2008)

First identified Medicinal Plant in Sillalai, Jaffna, Sri Lanka.

Botanical Name:	<i>Peristrophe Paniculata</i> (Forssk) Brummitt.
Family:	Acanthaceae
Common Name:	
Tamil:	Naganandha
Sinhala:	unknown
English:	Panicled Peristrophe.
Synonyms:	<i>Dianthera bicalyculata</i> Retz. <i>Dianthera malabarica</i> L. f <i>Dianthera paniculata</i> Forssk. <i>Dicliptera paniculata</i> (Forssk) I. Darbysh. <i>Justicia bicalyculata</i> (Retz) Vahl. <i>Justicia ligulata</i> Lam. <i>Justicia malabarica</i> (L.f) W.T. Aiton. <i>Peristrophe doriae</i> A. terracc. <i>Peristrophe kotschyana</i> Nees.
Status:	Native.

Description: Annual herb, up to 35-120 cm tall or more; Stems erect to spreading, sharply 06 angled, sparsely to densely hairy with up to 02 mm Long spreading hairs.

Leaves on 01-1.7 cm long petioles; Lamina Ovate – elliptic to lanceolate, 04-06 X 1.5-04 cm, densely lanceolate, Leaf – blades narrowly Ovate with prominent veins, pubescent especially on nerves beneath, basally round to acute, acute to acuminate at the apex.

Primary inflorescences arranged in lax axillary Cymes spread along the Stems, the entire plant looking like a lax inflorescence; leaves of the apex of the branches, upper most ones narrowly triangular – subulate with a thin White margin 04-05 X 0.5 mm.

Flowers Solitary, Corolla tubular 12-14 mm long, tube \pm 5 mm long, two lipped, lips up to 07 mm long, Purple in Colour, Lower lip larger, with two Stamens attached, throat White with dark Purple markings; bracts 02, linear spatulate, much unequal, 07-15 mm long, acute; bracteoles in 02 valvate pairs, unequal – sub equal, scarious on margins, acute.

Calyx lobes linear, 3.5-04 mm long, hairy, acute valvate. Corolla tube cylindrical, 04-05 mm long, lips sub equal, puberulous; upper lip elliptic Oblong, 05-07 mm long, entire or notched; lower lip slightly longer than upper, deflexed, slightly crested with 03 acute lobes. Staminal filaments 05 mm long, hairy; Ovary oblong, apically pubescent; Style -1 cm long. Capsule ellipsoid, 01-1.2 cm long, basally solid and hairy, acuminate.

Seeds Orbicular, 02-05 mm across; with shortly stalked minutely papillate concentrated to the edge.

Distribution: First identified in SILLALAI areas, Jaffna, District, Northern Province, Sri Lanka.

Flowering Season: Flowers flowering on March to April.

Seed producing on: April to May.

Plant disappeared: Plant going to disappearing on May month.

Plant identified on: February of 2012

Identified by: Dr. S.R. Pholtan Rajeev. (B.S.M.S)

Confirmed by: Dr. D.S. Wijesundara. Director General, National Botanical Garden, Peradeniya, Sri Lanka.

Few plants details among the Identified Rare Plants

Botanical Name: *Dioscorea pentaphylla*

Family Name: Dioscoreaceae

Tamil Name: Kattukilangu, Allalkilangu

A tall, slender, prickly, climber with stems twining to the left. Leaves alternate, 3-5 foliate. Bulbils globose or cylindrical, usually plentiful. Tubers almost invariably single, texture and shape variable, skin brown, yellow or purplish, flesh, firm in ovoid tubers covered with bristly roots and soft in elongated tubers with few roots, pale cream or lemon yellow with purple flecks.

The first includes varieties with soft, esculent tubers borne close to the surface of the soil, the second with tubers, deeply buried, and the third yielding hard tubers, nauseous and unpleasant to eat.

As the species includes both poisonous and innocuous forms, tubers should be consumed only after repeated boiling and washing. The nutritive value of edible tubers is nearly the same as that of *Dioscorea alata*. Analysis of tubers of different races gave the following values (on dry matter basis) albuminoids, 8.68-15.93, ash, 4.91-7.32, fat, 0.72-1.35, Carbohydrates, 71.07-80.77, fibre, 2.22-7.96, and P₂O₅ 0.44-0.73%. The flowers are often collected and used as vegetable. Leaves are also eaten in times of scarcity. Tubers are used to disperse swelling and as tonic. The alkaloid, dioscorin, and the saponin, dioscin, occur in varying quantities in different species of yams. Dioscorin (C₁₃H₁₉O₂N) is abundant in *Dioscorea hispida* and its tubers when consumed in large enough quantities cause paralysis of the respiratory organs and even are used for washing silk, wool and hair, and as fish poison. It used in the treatment of rheumatoid arthritis and rheumatic fever [44].

Botanical Name: *Cassytha filiformis* Linn.

Family Name: Cassythaaceae

English Name: Love-Vine

Tamil Name: Erumaikoththan

A herbaceous, Parasitic, leafless twiner. Commonly seen at Sillalai. Stem yellowish green, slender, forming a web of leafless cords, flowers small, white, in lax or dense lateral spikes, drupes black, globose, enclosed in fleshy perianth lobes.

The plant, which is a widespread pest, is found parasitizing a large number of plants and commonly forms festoons of long, pale green, slender thread-like sets hugging from the hosts. It clings to the host by means of saucer-shaped; profusely branching appears masking the host plant entirely. The fruits are eaten. The plant is used for seasoning buttermilk in south India. The plant is reputed in the indigenous system of medicine as an astringent and diuretic. It is given in biliousness and chronic dysentery. A decoction of the plant prevents haemoptysis.

The plant possesses pesticidal and insecticidal properties, and is used to wash hair kill vermin [44].

Constituents - Neolitsine, Dicentrine, Cassythidine, Launobine, Bulbocapnine, O-methyl - Caassyfiline, actinodaphne, assythicine, Cassythicine, Nantenine, Laurotetanine [44].

Botanical Name: *Vitis pedata* Linn.

Family Name: Vitaceae

Tamil Name: Mulladinayakan

Sinhala Name: Mediyavel

Scandent, softly pubescent, sometimes hairy, rarely globose, tendrils long, slender, forked. Leaves 7-11 foliolate. The lateral leaflets pedately arranged, common petioles 5-7.5 cm long, hairy or glabrate, leaflets 5-12.5 by 2.5-6.3 cm. Oblong-lanceolate, acuminate, serrate, pubescent, or glabrous often oblique at the base petioles variable in length, those of the terminal leaflets usually much longer than those of the lateral ones. Flowers bisexual, white in axillary divaricate shortly pedunculate corymbose cyme. Calyx shallow & lobed. Lobed triangular. Petals 4 (rarely 5) triangular. Calyprate deciduous cohering at the apex. Disk large, cup shaped, exceeding the ovary. Berry about the size of a pea. Subglobose or often 4 lobed, 2-4 seeded cream coloured when ripe. Seed's hemispheric, smooth with a deep circular pit closed by a thin membrane on the flat lower face [44].

Botanical Name: *Capparis sepiaria* Linn.

Family Name: Capparidaceae

Tamil Name: Shenkaththari

It is a much-branched, armed shrub or woody climber, with oblong, elliptic or obovate leaves, white flowers, and globose deep purple, fleshy edible berry occurring sparsely in the dry region as Sillalai in Jaffna district. The plant is parasitic by *Cassytha filiformis*. The plant is credited with Anti pyretic & Antiseptic properties. It is useful in skin diseases. The juice of inner bark of the root is used for scabies & eczema [44].

Constituents: Glycosides, Anthocyanins, Flavonoids, Amino acids, Phenolic acid [44].

Botanical name: *Plecosperrum spinosum* Linn.

Family name: Moraceae

Tamil name: Elumullukkodi

English name: Axils pined mulberry

A large straggling, thorny shrub or small tree. Found in eastern Himalayas & Deccan peninsula up to an altitude of 1200 m. Records of its occurrence in the sub Himalayan tracts of Punjab & Uttar Pradesh lack confirmation. Bark orange-brown. Pedaling off in thin flakes. Leaves obovate or elliptic oblong. Flowers in heads, small, dioecious, fruiting heads fleshy. Lobed 1.25 cm in diam.

The plant is found in open places and as hedges. It has a slow rate of growth with a mean annual girth increment of 1.3 cm. The sapwood is grayish, heartwood small, orange yellow. Containing yellow resinous matter. Very hard & heavy.

The wood is reported to be suitable for tool handles & ornamental cabinet work & is good fuel. Bark & wood have been reported to be used in Darjeeling Terai for dyeing silk yellow [44].

Botanical Name: *Hugonia mystax*

Family Name: Linaceae

English Name: Climbing flax

Tamil Name: Mothitakkanni

Sinhala Name: Bugettiya

A rambling, scandent shrub. With yellow tomentose branches and short, horizontal branchlets which are leafless below and provided near the ends with a pair of circinate hooks, leaves simple, alternate stipulate, 3.8-6.3 cm long, 2.5-3.8 cm broad, elliptic-obovate, obtuse or subacute, entire, reticulately veined, veins conspicuous on both sides, glabrous, base tapering; petioles 1.5 cm long, hairy, stipules lanceolate; flowers regular, bisexual, yellow in colour; fruit a globose drupe about 1 cm diam. Surrounded by persistent sepals.

Uses: The bruised roots are used externally to reduce inflammatory swellings and as an antidote to snake-bite poisoning. Internally they act as an anthelmintic and febrifuge [44].

Botanical Name – *Scutia myrtina*
 Family Name – Rhamnaceae
 Tamil Name – Thudari

A climbing straggling shrub armed with sub-opposite recurved prickles found in the Jaffna peninsula from Mathagal and in Sillalai.

Leaves elliptic obovate or crenate, coriaceous flowers small white in axillary umbels; berries globose, smooth, white or black. Fruit is considered astringent and is eaten. In India the leaf is said to be used in ointment locally applied to hasten parturition [44].

4. Discussion

More plants from the family Leguminaceae are used for medicinal purposes compared to any other plant family in Sillalai, Jaffna because they contain a wide range of biologically active compounds and also because being one of the largest families in the plant kingdom, a large number of plants belong to this family. The popularity of herbs in traditional medicine has been linked to their higher likelihood of containing pharmacologically active compounds compared to woody plant forms. This may explain the use of many herbs in the traditional medicinal practice in Sillalai, Jaffna. Leaves of plants have been reported to accumulate, inulins, tannins and other alkaloids which may be responsible for their medicinal properties, explaining its wide use. Other studies reported the leaves as the most widely used plant parts.

Different types of preparation made from medicinally important plants included decoction, juice, powder, paste, oil and whole plant extract. Some plants were even used in more than one form of preparations. Majority of the plant preparation were in the form of decoction obtained from the roots, seeds, stem, leaves and flowers of *Abrus precatorius*, *Ixora coccinea*, *Dodonaea viscosa*, *Asparagus racemosus*, *Oroxylum indicum*, *Boerhaavia diffusa*, *Borreria verticillata*, *H. isora*, *C. phlomidis*, *Cleome gynandra*, *Enicostemma littorale* and *Euphorbia hirta*. Preparations in the form of Juices were attained from the leaves of *Abutilon indicum*, *Barleria prionitis*, *Coleus aromaticus*, *Cadaba fruticosa* and *Melothria maderaspatana*. Powder preparations were made from the roots, leaves and fruits of *Aristolochia bracteolata*, *Mimosa pudica*, *Rhinacanthus nasutus* and *Withania somnifera*.

The roots and leaves of *Acalypha indica* and *Cassia alata* yielded paste formation. *Indigofera asphalathoides*, *Hibiscus rosa-sinensis*, *Wrightia tinctoria*, *Atalantia monophylla* and *Calophyllum inophyllum* plants were used for oil formation. The whole plant extracts resulted from plants like *Evolvulus alsinoides*, *Elytraria acaulis*, *Limnophila indica*, *Trichodesma indicum* and *C. gynandra*. The leaves and roots are the two major plant parts which are frequently used for the treatment of diseases by the local people of Sillalai, Jaffna. External applications prepared from medicinal plants are used to cure many diseases like skin diseases, wounds, rheumatism, poisonous bites and dandruff. Oral consumption involves curing fever, cold, cough, diarrhoea, jaundice and indigestion. The local people of the Sillalai, Jaffna prescribed the medicinally important plants either as single or as in combination with several plants to cure suffering of the people from illness. The local people preferred preparing medicines by combining several plant parts, since the combination rapidly cures the diseases and also enhances the immunity power of the patients. For example,

coconut oil is combined with some medicinally important plant leaves like *W. tinctoria*, *C. alata*, *H. rosa-sinensis* and *C. inophyllum* for treatment of skin diseases [35].

Medicinal preparations attained from either a part of a single plant or a single whole plant such as *B. diffusa*, *B. prionitis*, *C. fruticosa*, *E. alsinoides*, *E. acaulis* and *E. littorale* are used in the treatment of jaundice, indigestion, fever, general weakness and deworming of intestine. *Aloe vera* is used to treat malaria, gastritis, stomach ache, wounds and skin diseases. Roots of *Aristolochia bracteolata*, *Asparagus racemosus*, *Withania somnifera* are used to treat male sterility, syphilis and gonorrhoea. The leaves, roots and flowers of *Clerodendrum phlomidis*, *Helicteres isora*, *Melothria maderaspatana* are used to treat spermatorrhea, indigestion, analgesic diseases and also in wound healing.

Medicinal plants play an important role in providing knowledge to the researchers in the field of ethno botany and ethno pharmacology. The observations of present study showed that traditional medicine plays a significant role among the local people of Sillalai, Jaffna. Besides this, in other districts of Northern Province, practitioners are practicing the traditional system of medicine namely Siddha and Ayurveda.

In Sillalai, Jaffna, the traditional medicinal system is very efficient, supportive and successful in treating Skin disorders, pediatrics and rheumatism. On interviewing, six local traditional healers of Sillalai, Jaffna informed that the young tender shoots of *Pandanus* spp. along with over-night soaked boiled rice water is given to patients in early morning who suffer from severe jaundice for curative purpose because the leaves of *Pandanus* spp. are a natural antioxidant and *Pandanus* extracts are capable of retarding oxidation [10]. The leaves of the plant *Phyllanthus niruri* is combined with white goat milk and taken with empty stomach in three doses for effective treatment of severe jaundice and liver diseases and it also enhances the appetite [3]. In recent research, this plant has gained world - wide attention due to its effectiveness against Hepatitis B [45]. In the modern research, this plant is found to contain an antiviral activity extended to the human immunodeficiency virus [11].

Data collected from the Sillalai, Jaffna district were compared with available data in other districts of Northern Province like Mullaitivu and Vavuniya. An interesting observation was that some medicinally important plants such as *Achyranthes aspera*, *Mukia maderaspatana*, *A. indica*, *Abrus precatorius*, *H. rosa-sinensis*, *Mimosa pudica*, *B. diffusa* and *Solanum nigrum* were found to be practiced as important medicinal plants in other district for the treatment of various diseases like dog bites, skin diseases, cold, fever, deworming, wounds and hydrocele. Apart from this, medicinal plants like *E. alsinoides*, *Helicteres isora* and *Ocimum basilicum* are practiced among the tribal of Sillalai for their medicinal value to treat venereal diseases, fever and cold and also as a hair growth promoter.

Most young people are not interested in traditional medical practice because it is less profitable compared to growing cash crops. The influence of western culture, rural-urban migration in search for better educational and job opportunities and the commonly held view by young people that traditional medicine is superstitious and something for the poor and uneducated may result to a loss of this rich and useful knowledge which has accumulated over several generations.

5. Conclusions

There is always a hunt for rich ethno botanical knowledge for ethno botanical studies of medicinal plants. Further, this research has placed on records the local uses of medicinally important plants which were interviewed among 215 local people of Sillalai, Jaffna district. The traditional healers are the main source of knowledge on medicinal plants. In Sillalai, Jaffna district, many local people are going for agriculture and sustainable harvesting of plants with medicinal value which helps not only in conservation of these traditional medicinally important plants but also in marketing of these plants and their products for economic growth of the people. Finally, to conclude, this research article will attract the attention of ethno botanists, phyto-chemists and pharmacologists for further critical investigation of medicinal plants present in the districts of

Northern Province, Sri Lanka.

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7. Appendix



Peristrophe paniculata (Forssk) Brummitt.

First identified in SILLALAI areas, Jaffna District, Northern Province, Sri Lanka.

8. Limitations

This research carried only identified medicinal plants and there uses only. First identify medicinal plant in survey area – Sillalai. This plant identified only but not process of chemical analysis and further analyses because not available in Jaffna area and too much of cost for analysis in private sector. Future researchers can analysis of phyto-chemical and other measures.

Didn't carried Traditional Medical practitioners' (TMPs) experiences were true or not that is very complicated and very huge research. Future researches can do TMP's experiences proof by each medicinal plant research.

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