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A Survey of Potent Folklore Medicinal Plant Used By Ethnic People of Thuthipattu and Karuvatchi Village, Villupuram District of Tamil Nadu, India

A. Babu, D. Anand, P. Saravanan*

Department of Botany, Ramakrishna Mission Vivekananda College, Chennai 600004, Tamil Nadu, India

ABSTRACT

The present study was carried out in two geographically isolated Hillocks, Sacred Groves and Unclassified Vegetation of Gingee Taluk of Villupuram district, Tamil Nadu, India, a region inhabited by farmers and tribal groups. Data obtained through guided field-walk method on ethnomedicinal plants and ethnographic profile of respondents was documented using semi structured questionnaires. Information on medicinal plants with their correct botanical identities with family, local names, parts used, is carefully recorded. It resulted in about 50 medicinal plants used for the treatment of several diseases either in single or in combination with some other ingredients. The survey shows that the informants in two villages have very good knowledge about the medicinal plants used for various ailments. This present study analyzed the data collected from the study area by applying the quantitative ethnobotanical devices such as, Use value (UVi), Factor informant consensus (Fic) and Fidelity level (Fl%).

Keywords: Villupuram district, Ethnobotanical devices, herbal practitioners, Fic, Fl%, UVi.

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***Corresponding author**: Dr. P. Saravanan
Address: Department of Botany, Ramakrishna Mission Vivekananda College, (Autonomous), Mylapore, Chennai 600004, Tamil Nadu, India
Tel.: +91-9444316365
E-mail ✉: sarviveka@gmail.com

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INTRODUCTION

Ethnopharmacological studies have been extensively discussed as a promising strategy for development and discovery of new medical and pharmaceutical products. [1] Ethnopharmacology relies on accumulated cultural experiences with nature to aid in identifying bioactive molecules. India is rich in ethnic diversity and traditional knowledge that has resulted in a considerable body of ethnobotanical research, of which on study has revealed a deep understanding of medical plants supported by high consensus. However, knowledge, cultivation and maintenance of these native species within rural communities are decreasing, due to modernization processes, such as acculturation. [2] In

addition, a tendency to consider all plant resources as native by local people has been directly or indirectly documented in several studies. [3]

When faced with the rapid decline in traditional knowledge it is relevant to identify medicinal species and to record their uses within local communities. This is especially important in regions that currently are affected by land-use change and modernization. Documentation and awareness of ethnobotanical knowledge within these regions may facilitate the maintenance of medicinal plant resources and uses. About 420,000 flowering plants were reported from the world [4] and many tropical species are not yet named. More than 50,000 plants have been used for medicinal purposes. The documented medicinal plants were used to cure different ailments such as skin problems, cold, fever, stomach ache, poison (snake, scorpion and insect) bites etc.

Furthermore, ethnobotanical studies may support implementation of strategies that integrate native medicinal plant uses with sustainable management of natural resources where conversion of forest areas into agriculture land and reforestation with exotic species have destroyed large areas of natural forest including high plateau, upland, and montane forest. Furthermore, many multiple-use plants have been overexploited. [5] This situation has caused loss of a number of native species.

Since time does not allow us to evaluate all existing medicinal plants scientifically selection of the most important taxa is a prerequisite to begin ethno pharmacological, photochemical and toxicological studies. For this purpose it is necessary to determine the species that are most used to treat a particular illness. A useful tool to find these species is the informant consensus factor. [6] In view of this, the present investigation was under-taken to document the medicinal plants used by the tribes to treat infectious diseases, and also to evaluate the antimicrobial activity considering informant consensus factor.

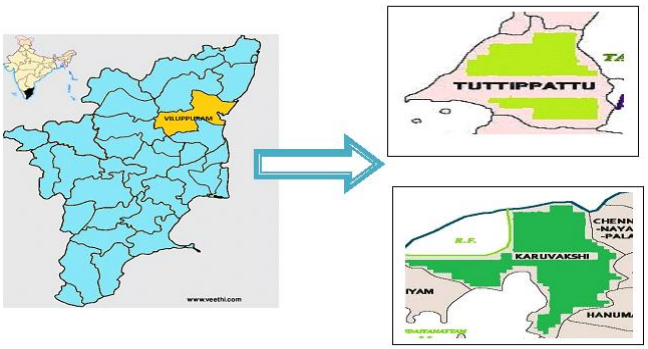

Fig. 1: Map showing locations of the villages. Expanded map: outlines the villages of Thuthipattu and Karuvatchi villages. The scale is representative purpose only.

MATERIALS AND METHODS

Study Area

The study took place at Thuthipattu and Karuvatchi villages, Villupuram district situated in the South-Eastern portion of the state of Tamil Nadu, India. The Thuthipattu village lies between Latitude 12.115582, N 12°6′ and Longitude 79.342987, E 79°20′ and Karuvatchi village between Latitude 12.077756, N 12°4′ and Longitude 79.353631, E 79°12′ (Figure 1). The altitude range is from 200 to 500 feet a.s.l. for both the villages. Temperature ranges between 25-35°C.

Data collection and plant collection

The fieldwork was conducted from March 2015 to February 2016 following the standard methods. [7-8] The villages were visited in different seasons (summer, monsoon and winter) to avail most of the plant resources in their flowering condition. During this period, door-to door visits were made in order to attempt to identify local people with a specialized knowledge of medicinal plant use. During the first contacts with the local population, a specialist was identified by the inhabitants themselves. A specialist is defined as 'a person recognized by the community as having deep knowledge about the use of native and/or introduced plants in manufacturing remedies and in promoting cures'. Fifty local specialists were eventually interviewed, aged between 50 and 80 years using purposive sampling method. [9] The key informants selected from each sampled villages were the most knowledgeable ones as suggested by the tribal elders of respective villages. Before interview, Prior Informed Consent (PIC) was taken from each informant. The data have been collected by interviewing the informants through semi-structured and open-ended questionnaire. The plant name, parts used, preparation and mode of administration of the crude drug, disease cured, etc. were recorded in detail. Interviews were conducted in the local languages. [10]

Identification of plants

The plant specimens were collected and identified with the help of different Floras. [11-13] Collected plant were identified and authenticated by Botanical Survey of India (BSI). Collected plant specimens have been preserved as herbarium specimen following conventional techniques. [14] They were deposited at herbaria division in the Department of Botany, Ramakrishna Mission Vivekananda College, Chennai, Tamil Nadu, India for future reference.

User value

The Use value (UVi) a quantitative method that demonstrates the relative importance of species known locally, was also evaluated according to the formula [15].

$$UVi = \Sigma Ui/Ni$$

Where, UVi is the use value of a species, 'Ui' is the number of use reports cited by each informant for a given plant species and 'Ni' is the total number of informants interviewed for a given plant. A high use value indicates the potential importance of plant species reported.

Informant consensus factor

The first step employed in the data analysis calculating the informant consensus factor (ICF) to find the level of homogeneity among information. [16]

Table 1: Documentation of medicinal plants with scientific name, family, vernacular name, parts used, ailments and mode of administration

S. No	Botanical Name	Family	Vernacular Name	Part Used	Diseases*
1	*Abutilon indicum* (L.) Sweet	Malvaceae	Thuthi	Leaves	The juice of the plant is used for blood dysentery, fever and allergy. Dried leaves are used as a remedy for jaundice, piles, ulcer and leprosy.
2	*Acalypha fruticosa* Forssk.	Euphorbiaceae	Cnni	Leaves	Skin, liver ailments, proper expulsion of toxins from body, bruises.
3	*Acalypha indica* L.	Euphorbiaceae	Kuppaimeni	Leaves	Itching and skin.
4	*Achyranthes aspera* L.	Amaranthaceae	Naayuruvi	Leaves, root	Bone pain reliever, Poisonous bites.
5	*Alternanthera sessilis* (L.) R.Br.ex DC.	Amaranthaceae	Ponnanganni	whole plant	Used to treat Diarrhea, skin disease, fever, dyspepsia, hemorrhoids, liver and spleen diseases.
6	*Amaranthus viridis* L.	Amaranthaceae	Kuppai kirai	Leaves	Toothache, Dropsy.
7	*Ammania baccifera* L.	Lythraceae	Kalluruvi	whole plant	The plant is acrid, cooling, appetizer, stomachic, etc…..
8	*Andrographis echioides* (L.)	Acanuthaceae	Gopuramthangi	Leaves	Diuretic and jaundice.
9	*Andrographis paniculata* (Burm. f.)	Acanutheceae	Nilavemp	whole plant	Hyperpiesia, burning sensation, ulcer, chronic fever, etc……
10	*Argemone Mexicana* L.	Papaveraceae	kutiyotti (Pirammathandu	whole plant	Guinea worm infestation, skin diseases, all type of poisoning, malaria fever, and vesicular calculus, ulcers.
11	*Azadirachta indica* A. Juss	Meliaceae	Vembu	whole plant	Anti-microbial such as small-pox, anti-dote, to kill stomach worms, stem is used as tooth brush.
12	*Calotropis gigantean* (L.) Dryand.	Apocynaceae	Erukku	Leaves	The leaves are tied around wound made by thorns. Latex is used for joints pain with swelling. A pinch of dried powdered flowers with honey is recommended for a month.
13	*Cardiospermum halicacabum* L.	Sapindaceae	Mudakathan	Leaves	Leaf juice mixed with lime taken in empty dysentery.
14	*Cassia auriculata* L.	Leguminosae	Avarai	whole plant	Skin diseases, ulcer, diabetes, leprosy, worm infestation, chronic purulent, conjunctivitis.
15	*Cissus quadranqularis* L.	Vitaceae	Pirantai	whole plant	Poisonous bites, leprosy skin diseases.
16	*Cleome viscose* L.	Capparaceae	Naivelai	Whole plant	Fever, worm infestation, diarrhea.
17	*Cyanthillium cinereum* (L.) H.Rob.	Compositae	Puvamkuruntal	Leaves	Flatulence, intestinal colic, dysuria, leucoderma, psoriasis, chronic skin-diseases, destroying pediculi.
18	*Cynodon dactylon* (L.) Pers.	Poaceae	Arugampul	Whole plant	The juices obtained from leaf are internally useful for treating blood vomiting. Externally the plant is applied on chronic wounds.
19	*Cyperus rotundus* L.	Cyperaceae	Korai	Tubers	Skin diseases, ulcers, fever, and anti inflammatory.
20	*Eclipta alba* (L.) Hassk.	Compositae	Karisilanganni	Leaves	Leaf extraction Skin ulcers, cure wounds, eye drops.
21	*Enicostemma axillarem* (Poir.ex Lam.) A. Raynal	Gentianaceae	Vellarugu	Whole plant	The plant is locally applied for snake bite, digestive, stomachic, laxative anthelmintic, liver tonic, ulcers, skin diseases, fever.
22	*Euphorbia hirta* L.	Euphorbiaceae	Ammaan Pachcharisi	Whole plant	Female disorders, respiratory ailments (cough, coryza, bronchitis, and asthma), worm infestations in children, dysentery, jaundice, pimples, gonorrhea, digestive problems, and tumors.
23	*Ficus arnottiana.* (Miq.) Miq.	Moraceae	Kallarasu	Bark, leaf	Skin diseases, ulcer, and diabetes.
24	*Ficus benghalensis L.*	Moraceae	Alai	Leaves	Skin disease, mouth ulcer.
25	*Glossocardia bosvallia* (L.f) DC.	Asteraceae	porpadagam	Whole plant	Poison (snake, scorpion and insect) bites, sores and wounds, skin disease, etc…
26	*Glycosmis pentaphylla* (Retz.) dc.	Rutaceae	Kattu Konci	Leaves	Wound healing properties.
27	*Gmelina arborea* Roxb.	Laminaceae	Konci	Whole plant	Fever, helminthiasis, eczema, skin diseases.
28	*Gomphrena serrata L.*	Amaranthaceae	Venkondai karathai	Leaves	Cooling, diuretic tonic, aphrodisiac, alternative astringent to the bowels, promote growth of hairs, leprosy, ulcer and

					vaginal discharge.
29	*Holarrhena pubescens.*Wall.ex G.Don	Apocynaceae	Veppalai	Bark, seeds, leaves	Bronchopneumonia, hepatopathy, malaria, uropathy, skin diseases.
30	*Hybanthus enneaspermus* (L.) F.Muell.	Violaceae	Orilaithamarai	Whole plant	Whole plant extract is taken orally to cure diuretic. Root juice is given orally to treat urinary problems.
31	*Indigofera tinctoria* L.	Leguminosae	Awryi	Whole plant	Scorpion bites, ovarian, stomach cancer.
32	*Jatropha curcas* L.	Euphorbiaceae	Kattamanakku	Young stem, leaves, latex	Toothbrush, mouth ulcer.
33	*Kedrostis foetidissima* (Jacq.) cogen.	Cucurbitaceae	Appakovai	Leaves	Common cold in children.
34	*Leucas aspera* (Willd.) Link.	Lamiaceae	Thumbai	Leaves	The fresh leaves boiled, get decoction, Skin, to relieve of cold and cough.
35	*Mukia maderaspatana* (L.) M.Roem.	Cucurbitaceae	Musumusukai	Leaves, root	Common cold in children.
36	*Moringa oleifera* Lam.	Moringaceae	Murungai	Whole plant	All the parts are used to cure rheumatism, body strengthens, Synthesis of sexual hormones, solve excretory problems.
37	*Ocimum americanum* L.	Lamiaceae	Nai thulasi	Whole plant	Lowering blood glucose, diabetes, treat clod, fever, etc…..
38	*Ocimum tenuiflorum* L.	Lamiaceae	Krishna tulasi	Whole plant	All respiratory tract problems, cold, sore throats, whooping cough in children.
39	*Ocimum basilicum* L.	Lamiaceae	Tirnirupachai, karpura tulasi	Whole plant	Used a refreshing and cooling drink.
40	*Ocimum sanctum* L.	Lamiaceae	Tulasi	Leaves	The fresh leaves boiled and decoction is taken to relief the cough, dizziness, of boiled steams inhaled to relieve the Headache.
41	*Ormocarpum sennoides* (Willd.) DC.	Leguminosae	Elumpotithazhai	Leaves	The leaves are dried and made powder. It is to taken orally with honey in empty stomach in the morning to cure bone related problems.
42	*Perqularia daemia* (forssk.)chiov	Asclepiadaceae	Utthamani	Whole plant	Strangury, metro patty inflammations. Intermittent fever.
43	*Phyla nodiflora* (L.) Greene	Verbenaceae	Potuttalai	Whole plant	Burning sensation, anorexia colic ulcers asthma, knee joint and fever.
44	*Phyllanthus amarus* schum.& thonn	Phyllanthaceae	Kilanelli	Whole plant	Gastropathy, dropsy, jaundice, dysentery, intermittent fever, scabies, ulcers, wounds.
45	*Saussurea heteromella (D.Don) Hand.)*	Asteraceae	Kaliziri	Whole plant	Leaf paste with mustard oil is rubbed on leucoderma and wounds. Root extract is taken for fever, Colin, horse bites.
46	*Senna occidentalis* (L.) Link	Leguminosae	Nattam takarai	Seeds	Seeds to treat Diuretic, hemorrhoids, gout, laxative, rheumatism, diabetes, rheumatic. Despite the claims of being poisonous.
47	*Solanum nigrum* L.	Solanaceae	Manathakkali	Leaves	The juice taken from fresh leaves are used to treat for stomach ulcer.
48	*Solanum surattense* Burm.f.	Solanaceae	Kandankaththiri	Unriped fruit	To control tooth sensitive.
49	*Solanum trilobatum* L.	Solanaceae	Thuthuvalai	Leaves	Leaves are used to cure throat infection, cold, cough.
50	*Tribulus terrestris* L.	Zygophyllaceae	Seru Nerunji	Fruit	The fruits are cooling, diuretic and used in diseases of primogenital system and sexual weakness for which the drug is reputed.

* Source: Dr. Duke's phytochemical and Ethanobotanical Database.

Informant consensus factor (ICF) or (FIC), which was performed for each category of disease to establish the homogeneity of the information obtained from informants, was calculated according to the formula.

$$ICF = Nur - Nt / (Nur - 1)$$

Where, Nur = number of use reports from informants for a particular plant-use category; Nt = number of taxa or species that are used for that plant use category for all informants. ICF Values range between 0 and 1, where '1' indicates the highest level of informant consent and 0 the lowest.

Fidelity level

The fidelity level (FL), the percentage of informants claiming the use of a certain plant species for the same major purpose, was calculated for the most frequently reported diseases or ailments as:

$$FL (\%) = (Np / N) \times 100$$

Where, Np = number of informants that claim a use of a plant species to treat a particular disease; N = number of informants that use the plants as a medicine to treat any given disease. [17]

Table 2: List of the wild species used by the tribal of Thuthipattu and Karuvatchi villages with their medicinal importance

S. No	Botanical Name	Family	Medicinal plants importance	Use value
1	*Abutilon indicum* (L.) Sweet	Malvaceae	The juice of the plant is used for blood dysentery, fever and allergy. Dried leaves are used as a remedy for jaundice, piles, ulcer and leprosy.	0.85
2	*Acalypha fruticosa* Forssk.	Euphorbiaceae	Skin, liver ailments, proper expulsion of toxins from body, bruises.	0.76
3	*Acalypha indica* L.	Euphorbiaceae	Itching and skin.	0.97
4	*Achyranthes aspera* L.	Amaranthaceae	Bone pain reliever, Poisonous bites.	0.45
5	*Alternanthera sessilis* (L.) R.Br.ex DC.	Amaranthaceae	Used to treat Diarrhea, skin disease, fever, dyspepsia, hemorrhoids, liver and spleen diseases.	0.65
6	*Amaranthus viridis* L.	Amaranthaceae	Toothache, Dropsy.	0.55
7	*Ammania baccifera* L.	Lythraceae	The plant is acrid, cooling, appetizer, stomachic, etc…..	0.35
8	*Andrographis echioides* (L.)	Acanthaceae	Diuretic and jaundice.	0.51
9	*Andrographis paniculata* (Burm. f.)	Acanutheceae	Hyperpiesia, burning sensation, ulcer, chronic fever, etc……	0.87
10	*Argemone Mexicana* L.	Papaveraceae	Guinea worm infestation, skin diseases, all type of poisoning, malaria fever, and vesicular calculus, ulcers.	0.76
11	*Azadirachta indica* A. Juss	Meliaceae	Anti-microbial such as small-pox, anti-dote, to kill stomach worms, stem is used as tooth brush.	0.91
12	*Calotropis gigantean* (L.) Dryand.	Apocynaceae	The leaves are tied around wound made by thorns. Latex is used for joints pain with swelling. A pinch of dried powdered flowers with honey is recommended for a month.	0.85
13	*Cardiospermum halicacabum* L.	Sapindaceae	Leaf juice mixed with lime taken in empty dysentery.	0.77
14	*Cassia auriculata* L.	Leguminosae	Skin diseases, ulcer, diabetes, leprosy, worm infestation, chronic purulent, conjunctivitis.	0.90
15	*Cissus quadranqularis* L.	Vitaceae	Poisonous bites, leprosy skin diseases.	0.86
16	*Cleome viscose* L.	Capparaceae	Fever, worm infestation, diarrhea.	0.76
17	*Cyanthillium cinereum* (L.) H.Rob.	Compositae	Flatulence, intestinal colic, dysuria, leucoderma, psoriasis, chronic skin-diseases, destroying pediculi.	0.67
18	*Cynodon dactylon* (L.) Pers.	Poaceae	The juices obtained from leaf are internally useful for treating blood vomiting. Externally the plant is applied on chronic wounds.	0.71
19	*Cyperus rotundus* L.	Cyperaceae	Skin diseases, ulcers, fever, and anti inflammatory.	0.45
20	*Eclipta alba* (L.) Hassk.	Compositae	Leaf extraction Skin ulcers, cure wounds, eye drops.	0.71
21	*Enicostemma axillarem* (Poir.ex Lam.) A. Raynal	Gentianaceae	The plant is locally applied for snake bite, digestive, stomachic, laxative anthelmintic, liver tonic, ulcers, skin diseases, fever.	0.67
22	*Euphorbia hirta* L.	Euphorbiaceae	Female disorders, respiratory ailments (cough, coryza, bronchitis, and asthma), worm infestations in children, dysentery, jaundice, pimples, gonorrhea, digestive problems, and tumors.	0.45
23	*Ficus arnottiana.* (Miq.) Miq.	Moraceae	Skin diseases, ulcer, and diabetes.	0.67
24	*Ficus benghalensis* L.	Moraceae	Skin disease, mouth ulcer.	0.75
25	*Glossocardia bosvallia* (L.f) DC.	Asteraceae	Poison (snake, scorpion and insect) bites, sores and wounds, skin disease, etc…	0.41
26	*Glycosmis pentaphylla* (Retz.) dc.	Rutaceae	Wound healing properties.	0.58
27	*Gmelina arborea* Roxb.	Laminaceae	Fever, helminthiasis, eczema, skin diseases.	0.65
28	*Gomphrena serrata* L.	Amaranthaceae	Cooling, diuretic tonic, aphrodisiac, alternative astringent to the bowels, promote growth of hairs, leprosy, ulcer and vaginal discharge.	0.34
29	*Holarrhena pubescens.* Wall.ex G.Don	Apocynaceae	Bronchopneumonia, hepatopathy, malaria, uropathy, skin diseases.	0.76
30	*Hybanthus enneaspermus* (L.) F.Muell.	Violaceae	Whole plant extract is taken orally to cure diuretic. Root juice is given orally to treat urinary problems.	0.41
31	*Indigofera tinctoria* L.	Leguminosae	Scorpion bites, ovarian, stomach cancer.	0.68
32	*Jatropha curcas* L.	Euphorbiaceae	Toothbrush, mouth ulcer.	0.76
33	*Kedrostis foetidissima* (Jacq.) cogen.	Cucurbitaceae	Common cold in children.	0.78
34	*Leucas aspera* (Willd.) Link.	Lamiaceae	The fresh leaves boiled, get decoction, Skin, to relieve of cold and cough.	0.89
35	*Mukia maderaspatana* (L.) M.Roem.	Cucurbitaceae	Common cold in children.	0.68
36	*Moringa oleifera* Lam.	Moringaceae	All the parts are used to cure rheumatism, body strengthens, Synthesis of sexual hormones, solve excretory problems.	0.78
37	*Ocimum americanum* L.	Lamiaceae	Lowering blood glucose, diabetes, treat clod, fever, etc…..	0.71
38	*Ocimum tenuiflorum* L.	Lamiaceae	All respiratory tract problems, cold, sore throats, whooping cough in children.	0.56
39	*Ocimum basilicum* L.	Lamiaceae	Used a refreshing and cooling drink.	0.61

40	*Ocimum sanctum* L.	Lamiaceae	The fresh leaves boiled and decoction is taken to relief the cough, dizziness, of boiled steams inhaled to relieve the Headache.	0.79
41	*Ormocarpum sennoides* (Willd.) DC.	Leguminosae	The leaves are dried and made powder. It is to taken orally with honey in empty stomach in the morning to cure bone related problems.	0.78
42	*Perqularia daemia* (forssk.)chiov	Asclepiadaceae	Strangury, metro patty inflammations. Intermittent fever.	0.54
43	*Phyla nodiflora* (L.) Greene	Verbenaceae	Burning sensation, anorexia colic ulcers asthma, knee joint and fever.	0.71
44	*Phyllanthus amarus* schum.& thonn	Phyllanthaceae	Gastropathy, dropsy, jaundice, dysentery, intermittent fever, scabies, ulcers, wounds.	0.76
45	*Saussurea heteromella (D.Don) Hand.)*	Asteraceae	Leaf paste with mustard oil is rubbed on leucoderma and wounds. Root extract is taken for fever, Colin, horse bites.	0.34
46	*Senna occidentalis* (L.) Link	Leguminosae	Seeds to treat Diuretic, hemorrhoids, gout, laxative, rheumatism, diabetes, rheumatis. Despite the claims of being poisonous.	0.54
47	*Solanum nigrum* L.	Solanaceae	The juice taken from fresh leaves are used to treat for stomach ulcer.	0.67
48	*Solanum surattense* Burm.f.	Solanaceae	To control tooth sensitive.	0.76
49	*Solanum trilobatum* L.	Solanaceae	Leaves are used to cure throat infection, cold, cough.	0.76
50	*Tribulus terrestris* L.	Zygophyllaceae	The fruits are cooling, diuretic and used in diseases of primogenital system and sexual weakness for which the drug is reputed.	0.65

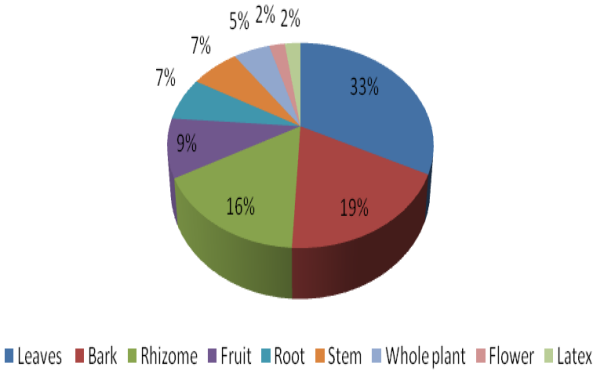

Fig. 2: Percentage of plant part used by traditional healets

RESULTS AND DISCUSSION

From this study 50 species of valuable medicinal plants belonging to 28 families were recorded and their ethno medicinal values were collected from the villages in treating different types. The collected medicinal plants have been arranged alphabetically according to botanical name, followed by common name, vernacular name along with organs uses (Table 1). The reported plant families include Laminaceae (5 species), Leguminosae (4species), Euphorbiaceae (4 species), Amaranthaceae (4 species), Solanaceae (3 species), Acanuthaceae (2 species), Asteraceae (2 species), Moraceae (2 species), Cucurbitaceae (2 species), Compositae (3 species), Apocynaceae (2 species), Malvaceae, Lythraceae, Papaveraceae, Meliaceae, Sapindaceae, Vitaceae, Capparaceae, Poaceae, Cyperaceae, Gentianaceae , Rutaceae, Violaceae , Moringaceae, Asclepiadaceae, Verbenaceae, Phyllanthaceae, Zygophyllaceae (1 species each). This indicates the widespread importance of the above-mentioned families in the study area.

Plant part used

The most abundant plants parts utilized by traditional healers to various disorders and ailments in local areas are the leaf (32.6%) was the most frequently used plant part, followed by the bark (18.6%), the rhizome (16.3%), fruit (9.3%), the root (7.0%), the stem (7.0%), the whole plant (4.7%), the flower (2.3%) and the latex (2.3%) [Figure 2]. The leaves of medicinal plants were most frequently used parts in herbal drugs to cure disease. These results are in accordance with what found in studies conducted in other parts of the world, which reported the predominant use of plant. [18]

Common diseases, such as colds, but also a small number of difficult or complicated diseases, such as cancer, were reported to be treated. The majority of plants mentioned by the informants were reported to be effective in curing the diseases they were applied to. Additionally, most of the informants mentioned the importance of using folk traditions, e.g. prayers, during treatments in order to ensure the effect of the medicinal plant.

Medicinal plants Use value (UV) and use report (UR)

In the current study the highest use value was observed for the *Acalypha indica* L. (0.97), *Azadirachta indica* A. Juss (0.91), *Cassia auriculata* L. (0.90) while, least use values were reported for *Saussurea heteromella* (D.Don) Hand.) (0.34), *Gomphrena serrata* L. (0.34) [Table 2]. Comparing the use values and uses reports of our study with other studies of regional and global we didn't find similar species to match, the differences may be due to variation in vegetation and geo-climate of the areas.

FIC values were determined to know the agreement among the informants of Thuthipattu and Karuvatchi village's area for use of plants to treat certain ailment categories. The FIC values are presented in the (Table 3). It is clear that the FIC values of Ulcer have the highest FIC value 0.89 with 85 use-reports for 10 plant species. The species responsible for this high consensus was *Jatropha curcas* L. followed by skin diseases (FIC =

0.85; 83 use-reports, 13 species), poisonous bites (FIC = 0.85; 41 use-reports, 7 species), fever (FIC= 0.83, 67 use reports, 12 species) dysentery (FIC = 0.80; 78 use-reports, 16 species). Medicinal plants supposed to be efficient in treating particular ailment have high FIC values. The high FIC value for ulcer possibly showed that this ailment is common in the study area due to poor sanitation in the region and there is a better communication established among informants for treating this ailment category. High FIC values also indicate that the species traditionally used to treat these ailments are worth searching for bioactive compounds. Our current research is exploring the consensus of Thuthipattu and Karuvatchi village's with respect to the same ethnotaxa across spatial (beyond local geographic villages) and cultural scales.

To determine culturally important medicinal species in the society, Fidelity Level (FL) of plants has been calculated based on use reports, which have been cited by ten or more informants for being used against a given ailment. The FL values are presented in (Table 4). The analysis showed that the highest FL value found in *Jatropha curcas* L. followed by *Cardiospermum halicacabum* L., *Solanum nigrum*L., *Glossocardia bosvallia* (linn.f) DC. The least FL values were found in the cases of *Cleome viscose* Linn., *Ficus arnottiana.* Miq. When selecting the most preferred plant species for each ailment category, we took the high Fidelity Level (%) in each category of ailment.

Table 3: Categories of ailments and informant consensus factor (FIC) for each category

S. No	Diseases	No. of use reports (Nur)	No. of taxa (Nt)	Fic= Nur-Nt/Nur-1
1	Fever	67	12	0.83
2	Dysentery	78	16	0.80
3	Ulcer	85	10	0.89
4	Skin diseases	83	13	0.85
5	Poisonous bites	41	7	0.85

*A species may be listed in more than one ailment category

Table 4: Most frequently used plants for different ailment categories based on highest FL (%) in each ailment category (Total informants = 20).

S. No.	Diseases	Most preferred species	No. of Informants (Ip)	Total No. of informants (Iu)	FL=(Ip/Iu)100
I	Fever	*Argemone mexicana.* Linn	3	6	50
		Cleome viscose Linn.	2	3	66.6
		Cyperus rotundus. Linn	3	4	75
		Ocimum americanum Linn.	2	4	50
		Phyllanthus amarus schum.& thonn	3	5	60
II	Dysentery	*Alternanthera sessilis* R.Br.	3	5	60
		Cardiospermum halicacabum L.	1	1	100
		Cleome viscose Linn.	1	3	33.3
III	Ulcer	*Abutilon indicum*	3	6	50
		Andrographis paniculata (Barm. f.)	2	4	50
		Ficus arnottiana. Miq	2	3	66.66
		Ficus benghalensis L.	1	2	50
		Jatropha curcas linn.	1	1	100
		Solanum nigrum L.	1	1	100
IV	Skin diseases	*Acalypha fruticosa*.Forssk.	3	4	75
		Enicostemma axillarem (Lam.).Raynal	2	3	66.6
		Leucas aspera (Willd.) Link.	2	3	66.6
		Ficus arnottiana. Miq	1	3	33.3
V	Poisonous bites	*Glossocardia bosvallia* (linn.f) DC.	1	1	100
		Indigofera tinctoria	1	2	50

I_p =number of informants who use a species for a specific ailment; I_u = total number of informants who mentioned the plant for any other use.

The diversity of ailments in our study may be limited to the common plants in our sample and some of the more common ailments treated in these villages, including ailments of mainstream people that come to the traditional healers to be healed. Native healing practitioners provide a source of income for many healers' families. The people are routinely consuming plants for their vital well-being and good health. An ancient tradition of these folklore practices is to eat certain plants on a regular basis according to the season in order to prevent certain disease. It is a common practice for these people to consume plants in the wild throughout their daily routine. A very fey traditional healer in these villages teaches the practice of herbal medicine priming to children.

Earlier studies by various workers on traditional medicinal plants also revealed that the socio economically backward local and tribal people of Tamil Nadu prefer folk medicine due to affordability at low cost and sometimes it is a part of their social life and culture [19-24]

Throughout history aboriginal people have been the custodians of biodiversity while sustaining healthy life-styles that utilize natural resources. Unfortunately, their basic requirements sometimes force them into activities such as deforestation for monetary gains, or for extending agricultural activities that lead to a loss of biodiversity, which is the very source of their food and medicines.

This is the first step toward the recognition of traditional knowledge in a scientific approach that will enhance society, nutrition, medicine, and resource management, etc. This study first documented the information about the traditional medicinal uses in Thuthipattu and Karuvatchi villages, Villupuram district. Our study reveals that plants are still used as a

major source of medicine for the local people living in the area. The specific contribution of this study towards the conservation of indigenous knowledge recognizes the value of the original indigenous knowledge system, namely the transfer of indigenous knowledge to the younger generation as the future custodians of the indigenous knowledge.

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