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Ethnobotanical Survey of Medicinal Plants Used by the Rural People of Dharmapuri District, Tamil Nadu

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Abstract: ***Ethnomedicinal plants are exploited for the treatment of several diseases and disorders such as jaundice, arthritis, ophthalmic diseases, skin diseases, dysentery, hypertension, gout, boils, bronchitis, asthma, diarrhoea, tooth, stomach and head aches, hemorrhoids, piles, snake and insect bites, leprosy etc. The present study was initiated with an aim to identify and document the indigenous knowledge of Dharmapuri District, Tamil Nadu. Field studies were carried out for a period of seven months, August 2017 to February 2018. A total of 100 plants species distributed in about 86 diverse genera and 47different families were identified. The vernacular name, botanical name, family, part(s) used, phytochemical constituents and their medicinal uses were recorded. Among them 88 plant species belonged to dicot families and 12 plant specimens belonged to monocot families. As a result, a wide array of medicinal plants are available at Dharmapuri District that needs to be explored for phytochemical and pharmacological activities. At the same time suitable measures should be taken for the conservation of these valuable plants.***

Keywords: Ethnobotanical survey, Use of medicinal plant, Traditional knowledge

1. Introduction

Since many years, human populations across the world are utilizing elements of their environment, particularly plants for treating themselves. Though spectacular progress has been achieved to date in the arena of science, an estimate of 75-87% of the global population mainly from the developing countries depends directly on plants for medicines.[1,22] The significance and research in the orbit of traditional knowledge have increased since the past years. Ethnobotany is defined as an anthropocentric approach to botany and is specifically concerned with the gathering of information on plants and recording their uses.[2] Ethnomedicinal survey is a trustworthy source for natural and synthetic drug discoveries.[3] The consequences of the loss of biodiversity have stirred both interest and controversy. Plants are the important sources of medicines which are used in treating innumerable human diseases. Since ancient times most of the medicinal preparations were ascertained from plants and these medicines were prepared in simple or complex forms. Currently a significant number of drugs have been established from plants that are used to treat innumerable diseases.[4] The higher plants are designated as the sleeping titans of drugs and they are being selected for their potent phytochemicals. The curative attributes of medicinal plants has reached worldwide and has drawn attention from several disciplines owing to its immense contribution to Phytomedicine.[5]

The documentation of ethnic names, systematic names and indigenous uses of plants not purely conserves indigenous knowledge but also accelerates forthcoming research on safety and effectiveness of medicinal plants in healing of diverse ailments. It agreement to this background the usage of medicinal plants as a basis of primary health care by communities in Dharmapuri District is recognized. This will confirm that traditional knowledge about the use of plants is conserved. In addition conservation of medicinal plants will add value to the recreational environment as well as health improvement through sustained ecosystems. This study was aimed at collecting and documenting plant species used to cure diverse health conditions by communities in Dharmapuri District.

2. Materials and Methods

Study area

Dharmapuri is a district in western part of Tamil Nadu in South India. It is the first district created in Tamil Nadu after the independence of India by splitting it from then-Salem district on 10 October, 1965. The other major towns in the district are Harur, Palacode, Karimangalam, Pennagaram and Pappireddipatti. Dharmapuri District is one of the major producers of mango in the state, fine quality granite is found in the district. It is also one of the main sericulture belts in the state. Around 30 percent of the district's area is under forest cover. Cauvery river enters Tamil Nadu through this district.The district is located between latitudes N 11 47’ and 12 33’ and longitudes E 77 02’ and 78 40’. Occupies an area of 4,497.77 km2 (1,736.60 sq mi) (i.e. 3.46% of Tamil Nadu). It is bounded on the north by Krishnagiri District, on the east by Tiruvannamalai Districtand Viluppuram District, on the south by Salem District, and on the west by Karnataka's Chamarajanagar District. The whole district is surrounded by hills and forests, and the terrain is of rolling plains type. Dharmapuri is located in the geographically important area in south India. The whole district is predominantly covered with forests. Spider Valley located near Hogenakkal is home to many wild animals. The district falls in the migratory path of elephants. Conflicts between man and elephant are most common in these parts. Many tribal communities depend on these forests. Vathalmalai, a mountain hamlet on top of Shervarayan hill chain has suitable conditions to cultivate coffee and jackfruit. Wild boars and spotted deer are commonly seen in Morappur and Harur forest region. Thoppur ghat has one of the area's scenic highways surrounded by mountains and forests.

3. Methodology

The study area was investigated to get information from ethnic practitioners and also to cross check the data provided by the other practitioners during the earlier visits. In order to document the utilization of medicinal plants, regular field surveys were conducted from August 2017 to February 2018 in Dharmapuri District. Several resource persons or informants or traditional healers were identified to get the ethnomedicinal information through direct interviews/oral discussions. The interviews were conducted in the local language, Tamil and precise question based proforma were designed and information were documented in the ethnobotanical field notebook. Ethnobotanical information comprised the vernacular name of the specific plant, parts utilized, medicinal uses and procedures of preparation and administration. All the species cited as medicinal plants were collected from the field at reproductive stage, with the help of informants in duplicate. A field sheet was recorded with collectors name, vernacular name, local name and ecological parameters. Information was gathered from all categories of village people such as the local healers, village head man, elderly persons and the person having a thorough knowledge of medicinal practices.[10] The information's collected regarding the medicinal uses of plants were analyzed properly and documented. The plants were identified taxonomically using the Flora of the Presidency of Madras, Flora of Tamil Nadu and Flora of Tamil Nadu Carnatic.[13,14,15, 22]

Data analysis

The majority of data collected in the questionnaire were descriptive in nature. The information about ethnomedicinal uses of plants and information's included in questionnaires such as botanical name, local name, family name, parts used, life forms, use value, phytochemicals and voucher number were tabulated for all reported plant species.

4. Results and Discussion

Documentation of ethnobotanical knowledge

Ethnobotanical data were collected from field surveys and oral interviews with the indigenous people who had a good knowledge about the plants and their medicinal uses. The study revealed the existence of 100 plant species belonging to 86 diverse genera and 47 assorted families which were used by Dharmapuri District peoples for treating several ailments (Table 1). The collected specimens were deposited in the Botany Department Herbarium of the College for future studies. The vernacular name, botanical name, family, part(s) used, phytochemical constituents and their medicinal uses were recorded (Table 1). Among them, 88 plant species belonged to dicot families and 12 plant specimens belonged to monocot families. Innumerable and valuable phytochemicals were reported to be present in the recorded plant species viz., alkaloids, terpenoids, sterols, phenolics, essential oils, saponins, tannins, flavonoids, vitamins, proteins, carbohydrates, lipids etc. (Table 1).

The rural areas expended diverse medicinal plants to heal variety of diseases and disorders like skin diseases, diarrhea, diabetes, asthma, fever, jaundice, wounds, cuts, stomach pain, cough, cold, hypertension, malaria, poisonous bites, body heat, body pain, dysentery, earache, respiratory disorders, eye troubles, hair growth, intestinal worms, jaundice, leprosy, menstrual troubles, piles, cardiac problems, pimples, ulcer, tooth-ache, urinary troubles, mouth wash, kidney stones, tuberculosis, ulcers, obesity, inflammation etc. The rural area peoples also used diverse parts of the medicinal plants based on their ability to cure disease (Table 1).

Table 1: List of ethnomedicinal plants and used by rural people

Botanical Name	Family	Life Form	Part (s) Used	Phytochemicals	Medicinal uses
Acalypha indica	Euphorbiaceae	Herb	Whole plant	acalyphin, acalyphamide, findersin, alkaloid, tannins, pyranoquinolinons	Skin disease, respiratory problems, constipation, Jaundice, Muscular pain
Achyranthus aspera	Amaranthaceae	Herb	whole plant	phenolic *compound*, saponin, flavonoid, proteins & amino acids, glycoside, saponins, triterpenoids	Haemorrhoids, piles, heavy menstrual, cardiac disorders, pruritus, rabies
Aerva lanata	Amaranthaceae	Herb	whole plant	phenolic compounds, phytosterols, apigeninquercetin-3-O-rutinoside, myrcetin, alpha amyrin, sitosterols	Urinary tract, jaundice, throat infection, digestive, diabetes, skin infections, obesity, Diarrhea
Albizia lebbeck	Fabaceae	Tree	whole plant	Albigenin, triterpene, albizinin, lebbekanin, friedelin, alkaloids, amino acids, protein	Asthma, urticaria, ascites, bronchitis, urinary infection, edema, tumors
Aloe vera	Liliaceae	Succulent	Whole plant	saponins, alkaloids, flavonoids, cardiac glycosides, tannins	Constipation, ulcer, skin problems, Aloe gel is used for treating osteo-arthritis, bowel diseases
Annona squamosa	Annonaceae	Tree	root, seeds, leaves	Terpineol, borneol, polyphenol, isokuinolin, annonin.	rheumatism, boils, diarrhea, heart tumorus, liver, heart, blood diseases
Arachis hypogaea	Fabaceae	Herb	seed	alkaloids, flavonoids, saponins, tannins, lipids anthraquinone and phenolic compounds, oils, carbohydrates, α-diphenyl-β- picrylhydrazyl	Aperient, demulcent, emollient, pectoral, diarrhea, heart disease, hypertension, rheumatism, cardiac diseases
Artocarpus heterophyllus	Moraceae	Tree	fruit, leaf bark, latex	Phytosterols, anthraquinone, terpenoids, phenols, glycosides, flavonoids, diterpenes, isoleucine	Leaves to treat ulcer, diarrhoea, stomach-ache, skin disease, asthma, cold
Artocarpus Hirsutus	Moraceae	Tree	Seed, fruit	Alkaloids, flavonoids, saponins, terpenoids	Fruit is edible, skin diseases, Diarrhea

Azadirachta indica	Meliaceae	Tree	whole plant	Alkaloids-nimbin, nimbidin, polymeric resins, tannins	Anthelminthic, rheumatism, nervous pain, Lubricant, toothpaste, protectant, balms
Bambusa	Poaceae	Tree	leaves,	Flavonoid, tannin, Steroids and	stomach disorders, respiratory
Arundinacea		Tree	stem, buds	phenolpentosans, fiber, protein, calcium, fats	stimulating, kills worms
Bauhinia Racemosa	Caesalpiniaceae	Herb	flower, fruit	scopoletin, Beta-amyrin, tannins, kaempferol & quercetin	diarrhea, rectal prolasetumors inflammation, hemorrhids
Boerhaavia diffusa	Nyctaginaceae	Tree	whole plant	Alkaloids, flavonoids, steroids, terpenoids, tannins, cardiac glycosides, anthraquinones amino acid, boeravinone-C, xanthones, punarnavine	cancer, kidney, liver diseases, debility, carminative, anemia, hepatitis, and constipation
Borassus flabellifer	Arecaceae	Shrub	fruits, leaves	Terpenoids, tannins, flavonoids and coumarins	biliousness, dysentery and gonorrhoea, diuretic, stimulant, snake bite, urinarytroubles
Bougainvillea glabra	Nyctaginaceae	Shrub	Flower	pinitol, betacyanine, flavonoids, tannins and alkaloids, sugars, cardiac glycosides	Respiratory disorders, diabetes The leaves are considered to have anti-inflammatory
Calotropis gigantean	Asclepiadaceae	Shrub	whole plant	calotropin, giganteal, akundarin, α- and β-calotropeols and β- amyrinacids, triterpene.	Treat haemorrhoids pils, carminative effect, digestive strength, cough and asthma, cholera, skin disease.
Canna indica	Cannaceae	Tree	Whole plant	anthocyanin, oleonolic, betutinic, acid, anti-carcinogenic	laxative, urine, drug, anti oxidant, hepatitis
Carica papaya	Caricaceae	Shrub	whole plant	papain,carpinine, carotenoids, Polyphenols	Blood pressure, dyspepsia, constipation, amenorrhoea Arthritis
Cassia auriculata	Caesalpiniaceae	Tree	whole plant	Alkaloids, flavonoids, saponins, cardiac glycosides, anthraquinones, tannins.	Astringent and tonic, refrigerant, stomach ache, conjunctivitis diabetes, constipation, liver diseses, urinary disorders
Cassia fistula	Fabaceae	Tree	fruits, root, leaves, seeds	Anthraquinone, flavonoids, flavon- 3-ol derivatives, alkaloid, glycosides, tannin, lupeol, beta-sitosterol and hexacosanol	Inflammatory swellings, ulcers, wounds, laxative, cold, skin disorders, fever
Casuarina equisetifolia	Casuarinaceae	Herb	twigs, root, bark	Alkaloids, carbohydrates, cardiac glycosides, flavonoids, phytosterols, saponins tannins	Dysentery, diarrhoea, and stomach-ache, asthma, aggressive, nervous.
Catharanthus Roseus	Apocynaceae		Whole plant	Phenolic compounds, aspartic acid, terpenoids, alstonines, volatile oil,	The leaves used to treat lung & ovarian cancer, malaria,
Chloris virgata	Poaceae	Grass	Leaf, root	dihydrofumariline, cryptopine, stylopine, 8-oxocoptisine, sanguinarine, oxysanguinarine, fumaric acid	inflammation pain, stomach ache, rheumatism
Cissus quadrangularis	Vitaceae	Creeper	whole plant	Amyrin, quercetin, Kaempferol, β-sitosterol, carbhydrates, cardic glycosides, proteins	Diuretic, purify blood, fractures strong bones, reduced, respiratory, dentalcare, elevated blood weight
Citrullus lanatus	Cucurbitaceae	Climber	fruit, seed, leaves	Flavonoids, sitosterol, phosphoric acid, fatty acids, carotenes	Seeds is demulcent, diuretic, urinary infections, inflammation, root used to purgative and emetic
Citrus limon	Rutaceae	Tree	Fruit	terpenes, polyphenol, tannins, Vitamin C, essential oil, carotenoids, coumarins and citric acid	Protection of liver, kidney, pancreas digestion, neurological & skin diseases, antiseptic
Citrus medica	Rutaceae	Tree	fruit, seed, leaves	carbohydrates, flavonoids, phenols, tannins, steroids, cardio active glycosides, saponins, terpenoids and volatile oil	Respiratory problems, malaria, febrifuge pills, asthma, arthritis, stomach-ache
Cleome viscosa	Capparidaceae	Herb	leaves, seed	Essential oils, terpenes, flavonoids, glucosinolates, anthocyanins and alkaloids asnevirapine	Dysentery, earache, rheumatism, piles, colic, dyspepsia, ulcer, flatulence, malarial fever
Coccinia grandis	Cucurbitaceae	Climber	root, fruit, leaves	Glycosides, alkaloids, flavonoid, terpenoids, phenols and tanninsbeta-amyrin, acetate, lupeol, B-sitosterol	Diabetes, eye troubles, gonorrhoea, skin eruption, headache, rheumatism
Cocos nucifera	Arecaceae	Tree	flower, leaves, fruits	Phenols, tannins, leucoanthocyanidins, flavonoids, triterpenes, steroids, and alkaloids	Useful in thirst, fever, urinary disorders, hyperacidity, physical strength
Commelina benghalensis	Commelinaceae	Herb	whole plant	Phlobatannins, carbohydrates, tannins, glycosides, volatile oils, resins, balsams, flavonoids and saponins, while terpenes, sterols, Anthraquinones	Plant is astringent, demulcent, laxative and mucilaginous, poultice, leprosy
Hyptis suaveolens	Lamiaceae	Herb	leaves, flowers,	Alkaloids, flavonoids, proteins	antidiarrhea, anthelmintic, diabetic, carminative, febrifuge, stomachic,

			seeds		snake bites, skin infections, wounds
Ixora coccinea	Rubiaceae	Shrub	Root, leaves, flowers	cardiac glycosides anthocyanins, rutin proanthocyandin, ursolic acid, kaempferol	dysentery, scabies, skin diseases
Jasminum officinale	Oleaceae	Climber	leaf, root, flowers	Phenolic compounds, saponins, flavonoids	Ulcers, skin disease, mouth ulcer, skin, eye, ear problems, urine stimulating, wound Healings
Jasminum sambac	Oleaceae	Shrub	whole plants	resin, salicylic acid, alkaloid, terpines, glycoside, tannins	Ophthalmic problem, ulcer, liver pain, vomiting, boils, mental alertnees
Jatropha gossypifolia	Euphorbiaceae	*Shrub*	whole plant	Fatty acids, sugars, alkaloids, amino acids, coumarins, steroids, flavonoids, lignans, protein, saponins, tannins, terpenoids	Digestive, scabies, skin disease, gum disease, maturant, latex to treat wounds healings, purgative
Lantana camara	Lamiaceae	Shrub	leaf, flowers	Alkaloids, phenolics, flavonoids, tannin, saponins, terpenes, phlobatannins and coumarins.	Cancer, skin itches, leprosy, rabies, chicken pox, measles, and ulcers, asthma, cold
Lawsonia inermis	Lythraceae	Tree	whole plant	terpenoids, phenolic compounds, protein and quinones.	antibacterial anti-fungal dye for hair, clears dandruff, headache, anti-inflammatory
Leucas aspera	Lamiaceae	Herb	whole plant	triterpenoids, oleanolic acid, ursolic acid and beta-sitosterol, nicotine, sterols, glucoside, diterpenes, phenolic compounds	Skin disease, insect bites, jaundice, sinusitis, scorpion sting, rheumatism, snake bite
Luffa cylindrica	Cucurbitaceae	Climber	fruit, leaf, seeds	bioflavonoids, riboflavin lucosides, alpha-spina sterol, alpha-spinisteryl glucosides and saponins	Snake bites, convulsions, cramps, tetanus, emetic, cathartic, dropsy, nephritis, chronic bronchitis, asthma, syphilis
Mangifera indica	Anacardiaceae	Tree	Whole plant	Lignin, alkaloids, glycosides	Constipation, bleeding
Mirabilis jalapa	Nyctaginaceae	Shrub	flowers, leaf	flavonoids, triterpens, proteins, alkaloids, alkaloids tannins and phenolic compounds	purgative, diuretic purpose, fever, diarrhoea, wound healing
Mollugo cerviana	Molluginaceae	Herb	Whole plant	flavonoids, glucosides, vitexin, orientins	blood impurity, hangover, burn, gonorrhea, jaundice, pleurisy
Mollugo nudicaulis	Molluginaceae	Herb	whole plant	Glycosides, alkaloids, coumarins, flavonoids, terpenoids, saponins and tannins, lipoprotein, lipid	Antipyretic, antiseptic, appetizer, emmenagogue, laxative and stomachic, anticancer, liver, serum creatinine, low density
Mollugo pentaphylla	Molluginaceae	Herb	whole plant	terpenoids, flavonoids, tanins, saponins, steroids, alkaloids	cardiovascular effects, diuretic, stomachic, antiseptic, rheumatism
Morinda citrifolia	Rubiaceae	Tree	Fruit	alkaloids, selenium, scopaletin, anthroquinones, flavonoids, tannins	Hypertension, painkiller, skin care, anti-cancer, liver disease
Moringa oleifera	Moringaceae	Tree	whole plant	9-octadecenoic acids, phenolics, riboflavin, carbohydrates and proteins	cardiac diseases, liver, constipation, heart disease, anaemia, inflammation, skin
Murraya koenigii	Rutaceae	Tree	leaves, seeds, barks	Glycoside-koenigin, essential oil, tannins	Digestive secretion, relives nausea, indigestion and vomiting troubles, dysentery
Musa acuminata	Musaceae	Tree	whole plant	Glycosides, tannins, phenols, steroids and flavonoids, saponins, anthraquinones, carbohydrates	Leaves are used as a treatment of dysentery, diarrhoea and malignant ulcers, respiratory diseases, anti-ulcer, apoptosis, stone problems, tuberculosis
Ocimum basilicum	Lamiaceae	Herb	leaves, seeds	Glycosides, gums, mucilage, proteins, amino acids, tannins, phenolic compound, triterpenoids, steroids, sterols, saponins, and flavonoids	healing, fever, eye problems, headache, bowel disease, ulcers, kidney stones
Ocimum canum	Lamiaceae	Herb	twig, leaf, stem,	Terpenoids, alkaloids, flavonoids, tannins, saponins, glycosides essential oil, and ascorbic acid,	Diabetes, anorexia, brochitis, fever, insect bites, constipation, parasitic infestations, cold,
Ocimum tenuiflorum	Lamiaceae	Herb	Leaf, root, stem	Alkaloids, terpenoids, cardiac glycosides, B-caryphyllene	Malaria, vomiting, cancer, ulcer, liver problem, Inflammation
Opuntia littoralis	Cactacae	Shrub	Flower, fruits, leaves, pods	Polyphenols, flavonoids, penduletin, rutin, kaempferol, quercetin	diabetes, hypertension, hyper Cholesterolemic, rheumatic pain, gastric mucosa diseases and asthma, inflammation, nausea, diuretic
Oryza sativa	Poaceae	Grass	Seed	carbohydrates, γ-oryzanol, tocochromanols, tocotrienols and tocopherols,proteins, vitamins-	diarrhea, excess cholesterol, hypertension, obesity, heart disease, cancer,

				thyamine, minerals	cardiac diseases.
Pedalium murex	Pedaliaceae	Succulent herb	root, fruit, stem, leaves	Phenolic *compounds*, saponins, alkaloids, xanthoprotein, triterpenoids, tannins and flavonoids	Demulcent, diuretic, gonorrhoea, dysuria, urethral stones, stomach pain, urinary tract
Pergularia daemia	Asclepiadaceae	Climber	whole plant	Flavonoid, tannins, alkaloid, glycosides-cardenolide, terpenoids, steroids and carbohydrates	To treat liver problems, fainting, diarrhoea, dysentery, colic, rheumatism, painful joints and limbs, malaria, appendicitis, amenorrhoea, venereal diseases
Phyllanthus amarus	Euphorbiaceae	Herb	whole plant	alkaloids, quercetin, phyllaemblic compounds, gallic acid, tannins, flavonoids, sterols, triterpenes	Carminative, diuretic, aphrodisiac, laxative, astringent, refrigerant, anaemia, jaundice, dyspepsia, haemorrhage disorders, diabetes, asthma, bronchitis, useful as mouth wash
Phyllathus emblica	Euphorbiaceae	Tree	whole plant	alkaloids, ascorbic acid, anti microbial, terpenoids, vitamin-C, Calcium.	Carminative, diuretic, diabetes, heart, digestion, ulcer.
Polyalthia longifolia	Annonaceae	Tree	leaf, stem,	Leucocyanidin, proanthocyanidin, sitosterols, campesterols, quercetin,	skin diseases, diabetes, urinary tract, reducing blood pressure,
Terminalia catapa	Combretaceae	Tree	whole plant	Tannin-punicalagin, terflavins, graniinB, Flavonoids - vitexin, rutin, Alkaloids, lignins, pentosans, saponins, sterols, triterpenoids	Leave used in Hepatitis, liver, diabetic diuretic, rheumatoid disease, health reproductive system, leprosy purgative
Thespesia populnea	Malvaceae	Tree	whole plant	protein, phenol, tannins, aminoacid, phytosterols, flavonoids	typhoid, headache, chronic cancer, Taenia infection, diabetes
Tribulus terrestris	Zygophyllaceae	Herb	whole plant	Glycosides, Saponins- glucopyranosyl, sitosterol, flavonoids-kaempferol, quercetin, tannins, fatty acids	abdominal diseses, anemia, kidney disorders, pneumonia, dysentery, asthma
Tridax procumbens	Asteraceae	Herb	flowers, leaves	Luteolin, glucoluteolin, fatty acid, Beta-sitosterol, dexamethasone	The leaves are used as a hair restorative haemorrhoids and to stop bleeding, bronchial catarrh, dysentery, diarrhoea
Vachellia nilotica	Fabaceae	Tree	whole plant	alkaloids, essential oil, phenolic glycosides, resins	urinary, bleeding, minor eye, hair and stomach problem
Vitex negundo	Verbenaceae	Shrub	leaves, oil, root, fruit, and seeds	Phenol, terpenoids, alkaloid- vitricine, casticin, triterpenoids, coumarins, quinines, steroids.	Leave to treat headache, skin affection,wound, pain, swelling, female sexual problem, fever
Zea mays	Poaceae	Grass	Leaves, roots	Phenolic compounds, flavonoids, quercetin diglycoside, thymol, saponin, thiamin, panthothenic acid	leaves and roots is used in the treatment of strangury, dysuria and gravel kidney problem, edema, liver, ulcer, Purgative
Ziziphus jujuba	Rhamnaceae	Tree	fruit & seeds	Ziziphus saponin, jujuboside, stepharine, vitamins	Diuretic, sedative, anodyne, refrigerant, emollient, stomachic
Ziziphus oenoplia	Rhamnaceae	Shrub	whole plant	Alkaloids, aminoacid, betulic acid, peptides, tannins	Ascariasis, anemia, liver diseases, kidney stone troubles.

Of the various plants reported in the study, some were consumed internally whereas some of the plants were used externally while some of them were used both internally and externally.[20] These valuable medicinal plants are used in the form of squash, paste, powder, extract and decoction, cooked or raw forms. In majority of the cases, fresh preparations are administered to avoid complications due to storage. Infusion is done by suspending plant material in either cold or pre-warmed water and decoction is done by boiling or heating of plant material in water.[21] Powder is obtained by finely grinding the plant parts to be used, after drying them. Juices are usually extracted from succulent plants. Most preparations are made with water as solvent. Beside this the rural people used lemon, black pepper, sugar, salt, camphor, etc. as adjuvant with different solvents. The advantage of external application is safety because external application results in indirect effects on the area and allows for easier regulation of dosages depending on the concentrations of beneficial or toxic compounds. Oral administration is mostly suggested by the healers due to the ease of administration without using complex accessories and this result agrees with previous reports. The people of Dharmapuri District prepared drugs with the help of traditionally designed mortar and pestle. Leaf juice was extracted by grinding or by crushing. In all preparations, standardized decoction with water was prepared. Drying of fresh plant in direct sun is avoided to maintain plant constituents. The traditional healers of the village usually collect the important medicinal plants from the field, dry and crush them, before storing the plant material in bottles. The medicinal preparations were made out of a single plant part or combination of several plant parts.

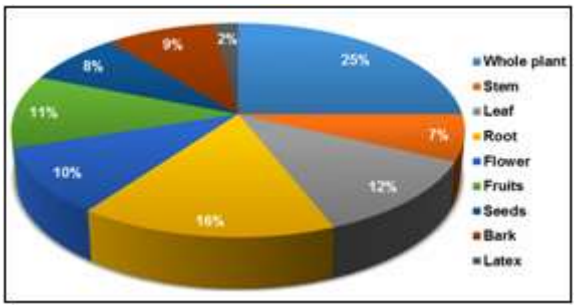

Figure 1: Percentage of plant parts used for the preparation of medicine

Since ancient times people have made use of plants for their essential desires, nourishment, medicare and living. Some plants used by ethnic people are cultivated, while others grow in wild conditions. The tribals depend chiefly on plants for food, clothing, shelter, medicine, oil, agricultural implements, arts, crafts and a multitude of other requirements. They also have some superstitious beliefs on some plants which were found to be tied/ worn on the body parts to cure various ailments. It is well known that during the process of evolution, plants have synthesized compounds whose structured diversity is often beyond the dreams of even the most imaginative organic chemists. Plants are still the main source of medicines to majority of people. Dependence on traditional medicine is not only related with the traditional faith of its effectiveness but also on pleasant survival of spirit and matter. The effectiveness of herbal medicines is supposed to be boosted when they are prepared and processed by enchanting mantras and incantations. The major reserve of medicines arising from plants and their phytochemical constituents and medicinal properties of most of the medicinal plants were recorded in the last few decades by a number of workers. 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 learned, analyzed and documented.[10]

There are plenty of possible applications of this work for use in the treatment of various diseases among the rural people. The indigenous people are using these plants for several thousands of years 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 house hold remedy for common diseases since time immemorial. The present study mainly focused on the documentation of medicinal plants used by the people at Dharmapuri district. The unprecedented interest and demand for plants with medicinal properties and potency for treatment of various ailments is causing over exploitation of such plant genetic resources. The depletion rate of plant resources generally is high, yet little is known about most of the world's plant species especially tropical floras. For the first time, information about traditional uses of the medicinal plants in the Dharmapuri district, Tamil Nadu, South India has been obtained through this study. Our study revealed that medicinal plants are major source of medicine for the local people living in the rural area. Results obtained in this study represents a useful and long lasting information about the medicinal plants, which can contribute to preserve the indigenous knowledge on the use of medicinal plants in this region and also attract the future generations towards the traditional healing practices.

Through this study we found that a great variety of medicinal plants were used by rural peoples for the treatment of numerous diseases and ailments but some peoples alone have the appropriate knowledge on the plants and their medicinal properties. However this study provides baseline information for scientific studies leading to isolation of bioactive compounds that can serve as starting materials in the discovery of new plant based drugs or standardized extracts as improved traditional medicine and also create awareness among the rural peoples about the importance of medicinal plants and their conservation.

5. Conclusion

For the first time, information about the traditional uses of medicinal plants in Dharmapuri district, Tamil Nadu was obtained by the present study. A total of 100 plant species belonging to 47 families were identified and documented. The various life forms and parts used for medicine preparation were identified and recorded. The use value of individual plants were ascertained. This study revealed that medicinal plants are the major sources of medicines in the rural area. The plants have been used by the rural areas for numerous healing benefits. The demand for plants with medicinal properties and its efficacy on treating various diseases / disorders is causing over exploitation of such plant genetic resources. This study therefore concludes that suitable requirements are needed in order to protect the traditional knowledge in a particular area with reference to medicinal plant utilization. Thus conservation of plants was insisted among the rural areas which is the need of the hour in protecting these valuable treasures. Besides, the plants need to be evaluated through phytochemical investigation to discover potentiality as drugs.

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