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ORIGINAL RESEARCH ARTICLE

A Survey of Some Medicinally Important Plants in Villupuram District of Tamil Nadu, India

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ABSTRACT

The survey was carried out in the remote villages in and around in the Villupuram District, Tamil Nadu. Most of the Plants are traditionally used by the people for their day life. There are 40 plant species belonging to from 26 families of medicinally important plants were identified and their uses are described. Among the species, *Cassia auriculata , Allium cepa, Capsicum annum, Trigonella foenum, Cuminum ciminum, Moringa oleifera, Tamarindus indica, Cocos nucifera, Solanum nigrum* are used in their daily life. While *Piper betle, Coriandrum sativam , Sesamum indicum, Eucalyptus globules, Zingiber officinale, Musa paradisica, Mentha arvensis, Piper nigrum. Arachis hypogeae* are commonly cultivated by these people.

Key words: Medicinal plants, Traditional healers, Chemical constituents, Ethno medicine, Botanical survey, Villupuram district.

INTRODUCTION

Among the Angiospermic plants, 420,000 flowering plants were reported from the world (Govaerts, 2001) and many tropical species are not yet named. More than 50.000 plants have been used for medicinal purposes (Schippmann *et al.*, 2002). India is represented by rich culture, traditions, and nature biodiversity, and offer unique opportunity for the drug discovery researchers. Utilization of plants for medicinal purposes in India has been documented in ancient literature (Charak *et al*., 1996). India is blessed with two (Eastern Himalayas and Western Ghats) of the eighteen world´s hotspots of plant biodiversity and is seventh among the sixteen Mega diverse countries, where 70% of the world´s species occur collectively. In India, there are over 17,500 species of higher plants, 64 gymnosperms, 1.200 pteridophytes, 2.850 bryophytes, 2.021 lichens, 15,500 fungi and 6,500 algae are reported. India is rich in its own flora that is, endemic plant species (5,725 angiosperms, 10 gymnosperms, 193 pteridophytes, 678 bryophytes, 260 liverworts, 466 lichens, 3,500 fungi and 1,924 algae) (Sanjappa, 2005). In India, the main traditional healers provide considerable information about the use over 7,500 plants or plant parts as medicine. That 80% population of the developing countries is unable to afford pharmaceutical drugs and rely on traditional herbal medicines, to sustain their primary health care needs. India is one of diverse countries in the world, rich in medicinal herbs and plants. In Indian traditional system of medicine, herbal medicines have been primordially. Over the last century, ethno botany has evolved into a specific discipline that looks at the people- plant relationship in a multidisciplinary manner, such as ecology, economic botany, pharmacology and public health (Balick, 19960. Herbal medicines are assumed to be of great importance in the primary healthcare of individuals (Sheldon *et al.*, 1997) and communities in many developing countries as the herbal medicines are comparatively safer than synthetic drugs. Plant – based traditional knowledge has become a recognized tool in search for new sources of drugs and neutraceuticals (Ghosh, 2003: Sharma *et al*. 2003). In this present research article, we report on the information collected from traditional practitioners to cure various diseases in Villupuram district of Tamil Nadu, India.

METHODOLOGY

Study Area

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Villupuram district is situated in the South – Eastern portion of the Tamilnadu, India. The district lies between 11°59′ and 12° 48′ north latitude and 78° 60′ and 79° to 80° East longitude and extending over an area of 8,204.63 sq.km. It is bounded on the North by Thiruvannamalai and Kanchipuram districts, on the East by the Bay of Bengal, on the South by the district of Cuddalore and the West by Salem and a part of Dharmapuri districts. There are 29 forest areas under legal classification including 25,185.58 hectares area in green cover. 25 areas fall under the reserve forest category with 24,753.24 hectares, 4 areas under reserve land category with 370.01 hectares area under unclassified forests. The reserve forest category has rich soil and bright sunlight, and important natural resources which are abundantly available in this region and responsible medicinal properties.

Study Site

In order to assess the consumption of indigenous medicinal plants, survey was carried out during the year, 2010 in the forest areas of Villupuram district in Tamilnadu, India. To get maximum information the survey was widened diagonally during the rainy season. The information on medicinal uses of the indigenous plants has been described after gathering it from local people, experienced aged rural folk, and traditional herbal medicine practitioners. Local herbal drug sellers and the information collected from the available literature. A total of 315 inhabitants were interview. Randomly people were selected of which 190 men and 125 women of age 30 and above (X=57.92) were interviewed in their local language, that is, Tamil. In addition, direct plant observation and identification was done with the help of local healers. Information on medicinal plants, local name, plant parts used and mode of administration for curing diseases has been recorded. Plants collected during the surveys were identified with the help of published regional flora (Gamble, 1935: Matthew, 1983).

Preservation of Plant Specimens

Standard method was followed with regard to collection of plant materials, drying, mounting, preparation and preservation of plant specimens (Jain, 1976). Voucher specimens of medicinal plants in triplicates were collected, prepared and identified. Plants with their correct nomenclature were arranged alphabetically by family name, vernacular name and medicinal uses. All the preserved specimens were deposited at the Department of Botany, Annamalai University, Chidambaram.

RESULTS AND DISCUSSION

Medicinal plants play an important role in providing knowledge to the researcher 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 Villupuram. Besides this, in other districts of Tamilnadu like Kancheepuram, Tirunelveli and Tiruvanamalai, practitioners are practicing the traditional system of medicine namely Sidda and Ayuvedha.

In Villupuram, the traditional medicinal system is very efficient, supportive and successful in treating jaundice, female sterility and rheumatism. On interviewing, six local traditional healers of Villupuram informed that the young tender shoots of Pandanus spp. along with overnight 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 .The leaves of the plant Phyllanthus amarus 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 (Sankaranarayanan, 2008). In resent research, this plant has gained worldwide attention due to its effectiveness against Hepatitis B (Yeh *et al.*, 1993). In the modern research, this plant is found to contain an antiviral activity extended to the human immunodeficiency virus (Qian – Curtrone, 1996).

The uses of certain species have gained importance due to their manifold properties. For example, *Cynodon dactylon* is used for gout, tuberculosis and raktapita, bleeding disorders (Rajurkar *et al.*, 2009) and beneficial in treating piles and leg pain. *Acalypa indica* for eczema and chest pain, *Achyranthus aspera* extract is used for the treatment of urinary disorder. (Jain and Patole 2001) have also reported similar activities in certain plant species such as *Musa paradisica* and *Allium cepa* in their studies on ethno botanical uses of plants. Decoction or juice of the Azadirechta indica is taken for all body problems. It has been claimed to be useful as diuretic, anthelmintic, antidiabetic, expectorant and hepatoprotective in tradition system of medicine. It is also used for antimicrobial and cytotoxicity activity, diuretic, arolithiasis and anti-inflammatory activity (Manokaran *et al*., 2008).

Certain species of Solanaceae are most important in medicinal field. *Datura metel* leaf past is mixed with *Curcuma aromatic* rhizomes are applied on the swelling for quick remedy till the swelling reduce of skin. Few drops of leaf juice is poured into ear to treat earache (Jeeva *et al* 2007).Leaf paste of *Solanum nigram* is applied externally to treat stomachache. Whole plant parts are taken as food to treat cough (Ramya *et al* 2008).*Coleus aromaticus* the vapours from the boiled leaves are inhaled to relieve coughing and cold. In this case the juice is put into the eyes two or three times in a day to relieve burning sensation and redness of eye (Ganesan *et al.*, 2007) The findings of the present study are in conformity with previous study published by (Nadkarni, 1976). In the treatment of asthma, cough, dysentery, jaundice and snakebite are essentially the same species, although the plant parts differed. However, there are certain examples of other plant species, which are exclusively for the treatment of specific diseases in the study area and represent the first report of such uses.

Most of the species used in the preparation of herbal medicine are collected fresh; very rarely, dried and used. Among the various plant parts used for the herbal formulation, leave, stem, bark followed by root were preferred over other plant parts such as flowers, seeds and fruits. The remedy was also administered according to age, sex, health condition of patient and severity of cases. Traditional practitioners restrict certain food items during treatment period such as rice, chili, oil, spices, cold water, egg, meat and curd and fast recovery. It is also observed that they sometimes involve spiritual and magical practices to overcome cold, cough and fever. The length of the treatment for skin diseases varied from one week to 30 days or till complete potency, part of the plant used, number of the species mixed and the mode of preparation.

Hence the role of ethno botanical surveys and field work is the crucial importance as some miraculous medicines for incurable diseases are known to the local communities and aboriginals and much acquired knowledge through the ages is usually passed on generation as a guarded secret of families. Therefore it is necessary to popularize, identify and utility of the medicinal plants.

Table 1: Medicinal Plants Used By Villupuram District, Tamil Nadu

Botanical name	Family	Vernacular name	Uses
Allium cepa L	Lilliaceae	Venkayam	Mature bulb is used as curry preparation to digest the cholesterol to prevent heart problems, bulb is used as headache.
Acalypha indica L	Euphorbiaceae	Kuppai meni	The fresh leave extraction applied with whole body to cure itching and skin disorder for human and cattle.
Azadirechta indica A.Juss	Meliaceae	Vembu	Vembu all the parts used, mainly for anti-microbial such as small-pox, Anti-tote, Kill stomach worms, tooth brush and paste, neem oil used for control the lice problem both human and cattle
Arachis hypogeae L	Fabaceae	Nilakadalai	The flour is used to build up bone settings combined with egg, and to apply with face to give polishes, overcome pimples formation.
Achyranthus aspera L	Amaranthaceae	Naayuruvi	Fresh leaves extract applied with bone pain and bone joining root part used as toothache
Cassia auriculata L	Caesalpiniaceae	Avarai	Fresh leaves are used as muscle contract, body pain, gas problems
Coleus aromaticus Benth.	Labiatae	Karpuravalli	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.
Capsicum annum L	Solanaceae	Milakai	The green and red fruit is used for toothache, anti-inflammatory, purgatives
Cuminum ciminum L	Apiaceae	Cheeragam	The seeds are soaking with cold water after 1 hour to filtered, the filtrate is drunk orally get a freshness and the pain is relived.
Carrica papaya L	Carricaceae	Papali	Latex is used as abortion of pregnant ladies, have wound healing.
Cocos nucifera L	Arecaceae	Thennai	The tender used for body coolant when tiredness, give briskness. Coconut oil is used as fixative of other plant products to cure wounds.
Calotropis gigantean L	Asclepiadaceae	Erukku	The leaves are tied around wound made by thorns. Latex poultice is used for joints pain with swelling. A pinch of dried powdered flowers with honey is recommended for a month. in mental disorder. Root powder is sprayed locally in leprosy and luecoderma.
Coriandrum sativum L	Apiaceae	Koththamalli	The extract is taken internally for giddiness. The volatile oil found in the leaves may have antimicrobial properties.
Cynodon dactylon L	Poaceae	Arugampul	The juices obtained from leaf are internally useful in blood vomiting. Externally the plant is applied on chronic wounds.
Datura metel L	Solanaceae	Umattai	Few drops of leaf juice is poured into ear to treat earache. Leaf poultice oil is used for joints pain with swelling.
Erythrina indica Lamk.	Fabaceae	Kalyana Murungai	A handful of leaves are ground with rice and made into a roasted dosa, this is consumed against cold and cough and mixed well 2 to 3 spoon powder mixed with boiled cow´s milk and given to cut piles during pregnancy. Leaf juice is given to cure whooping cough of children.
Eucalyptus globules Labill.	Myrtaceae	Thailamaram	The vapors of boiled leaves are inhaled for coughs and a cold. The oil from the plant, mixed with coconut oil is applied to the chest to relieve a dry cough and chest pain.
Ficus religiosa L	Moraceae	Arasu	Dried leaf powder is mixed with water and taken orally to get relief from body pain.

Ferula assafoetida L	Apiaceae	Perunkaayam	Latex of the bark is used as treat the wound healing and inflammation wounds, stop the dysentery for children
Ficus bengalensis L	Moraceae	Aalam	The latex is applied in cracking of foot region, the young twigs are used as a both tooth paste and brush also.
Hibiscus rosa-sinensis L	Malvaceae	Semparuthi	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.
Jatropha curcas L	Euphorbiaceae	Kaattamanaku	The resins are used as toothache when applying hot water cure for mouth ulcer.
Lawsonia inermis L	Lythraceae	Maruthani	Maruthani leaves are mixed with tamarinds fruit make a paste to cure cut-wounds and fire wounds.
Leucas aspera Spreng	Lamiaceae	Thumbai	The fresh leaves boiled, get decoction, inhalation of steams to relieve of cold and cough.
Murraya koenjii Spreng	Rutaceae	Karuveppilai	Leaves are used as eye problems, to cure irritate of eyes, used as a ingredients for culinary preparation.
Moringa oleifera Lam	Moringaceae	Murungai	All the parts are used to cure rheumatism, body strengthens, synthesis of sexual hormones, solve excretory problems.
Musa paradisica L	Musaceae	Vazhai	The shoot extracts drink to continue the kidney stone remove from body. Fruit used for excretion, digestion problems. A plant extract is given for snake bite and also for burns.
Mentha arvensis L	Lamiaceae	Pudhina	Leaf extract drank to stop vomiting
Nerium oleander L	Apocynaceae	Arali	Juice prepared from the stem bark is boiled with gingerly oil and two drops are poured into ear to treat ear pain.
Ocimum sanctum L	Lamiaceae	Tulasi	The fresh leaves boiled the decoction to relief the cough, dizziness, of boiled steams inhaled to relieve the headache.
Piper nigrum L	Piperaceae	Karu milagu	Cure the cold and cough when fever period.4-5 seeds are chewed in sleeping times the throat get freeness in awoke period.
Phyllanthus amarus Schurn & Thomn	Amaranthacea	Keelanelli	Leave juice is used to cure jaundice disease
Piper betle L	Piperaceae	Vettrilai	Leaves are used for chewing and are credited with many medicinal properties such as digestive, simulative, carminative and aphrodisiac.
Ricinus communis L	Euphorbiaceae	Aamanaku	Dried seed oil used as kill the stomach worms, and body coolant of both human and cattle.
Solanum trilobatum L	Solanaceae	Thuthuvalai	Leaves are used to cure throat infection, cold, cough, with the mixing of Tulasi and other spices also.
Sesamum indicum L	Pedaliaceae	Ellu	The seeds are used as essential oil for human health, to give cooling effects in the body, to solve the eye irritation.
Solanum nigrum L	Solanaceae	Manathakkali	The juice taken from fresh leaves are used to treat for stomach ulcer.
Trigonella foenum L	Apiaceae	Venthayam	The seeds are soaking with cold water after 1 hour eaten the body heat is downwards when menstruation time of virgin ladies.
Tamarindus indica L	Caesalpiniaceae	Puli	The leaves, fruits used as juice preparation with sugar supplements to maintain body freshness in starve condition.
Zingiber officinale Rose	Zingiberaceae	Ingi	Fresh rhizome juice is taken orally for appetizing agent, rhizome cut to small fragments soak with honey in few days later it is eatable to release out chest deposited cough, to cure Asthma disease. Ginger Mint used to cure throat infection.

CONCLUSION

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 315 local people of Villupuram district. The traditional healers are the main source of knowledge on medicinal plants. In Villupuram 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, phytochemists and pharmacologists for further critical investigation of medicinal plants present in the district of Tamilmadu, India.

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