

COMMON AND CULTIVATED MEDICINAL PLANTS AND THEIR UTILIZATION BY VILLAGERS IN SOUTHERN DISTRICTS OF TAMIL NADU

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Introduction

India is a veritable emporium of medicinal and aromatic plants. It has been estimated that of the 15,000 higher plants occurring in India, 9,000 are commercially useful, of which 7,500 are medicinal, 3,900 are edible, 700 are culturally important, 525 are used for fiber, 400 are fodder, 300 for pesticide and insecticide, 300 for gum, resin and dye and 100 for incense and perfume (Anon., 1994). In terms of the plant materials for traditional medicine, it is estimated that local communities used over 7,500 plant species. Various medical systems like Ayurveda, Unani and Homeopathy have been utilizing plants for their preparations and have now assumed great importance owing to side effects of synthetic drugs. Indian flora has innumerable medicinal plants, which are collected from forests by the tribal villagers. Many of them are also being exported to developed countries (ICFRE, 1992).

Since ancient time, mankind all over the world depended mainly on the plant kingdom to fulfil its need for medicines, fragrance and flavours. The Indian sub-continent is blessed with most varied and diverse soil and climatic conditions which are suitable for the growth of almost every

plant species. Medicinal and aromatic plants and their derivatives to the tune of nearly Rs. 200 crores are produced annually in the country (ICFRE, 2002). Apart from meeting its domestic requirement, the country exports large quantities of medicinal and aromatic plants and derivatives to earn valuable foreign exchange. There is considerable scope for India to contribute towards the increasing worldwide demand for medicinal and aromatic plant products (ICFRE, 2002).

Usage of plants in medicine had been a long practice by man from ancient times, which is evident from the literature. This practice of using plants in medicine is still prevailing not only among the tribal, but also among several others, who are living in the rural areas. The main aim of the study is not only to prescribe remedies for diseases but bring out the importance of plants in medicines, which may probably draw the attention of any biochemist and pharmacologist for further critical and scientific study. It is also aimed to encourage the farmers to go for cultivation of suitable medicinal plant species in this agro-climatic region. Hence, the present work, survey and observation was carried out in remote villages to identify the common and cultivated medicinal plants

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and their utilization by tribal in southern districts of Tamil Nadu.

Material and Methods

Study Area : The study area selected in Madurai, Dindigul and Theni Districts of Tamil Nadu is located at 10° 05' N latitude and 78° 16' E longitude at an elevation of 132 m above msl and the temperature ranged from 28 - 38°C. Average annual precipitation ranges between 750 and 850 mm. The climate is sub-humid to semi-arid. Soil is sandy loam to black cotton soil with a pH range of 6.5 to 7.5. Organic content of the soil is 0.50 – 0.62 %. The nitrogen, phosphorus, potassium, calcium and magnesium contents are 0.3 - 0.4 %, 0.07-0.09 %, 0.42-0.47 %, 0.5-0.7 % and 0.18- 0.25 %, respectively.

Survey conducted and observation made in remote villages and information regarding the existing medicinal plants and their local name, medicinal use, plant parts used and method of use was recorded with the help of nattivaidyas aged farmers. The family and botanical name of species, author citation, followed by local name, and their uses were also obtained from Wealth of India (CSIR, 1948-1976). The collected specimens have been deposited in the herbarium of Department of Botany, Thiagarajar College, Madurai, Tamil Nadu.

Results and Discussion

By understanding the important medicinal plants being utilized by people traditionally for various products available in the market and the raw material required for it, we can evolve a system to grow them in farm lands, wastelands, lakes

and riverbanks which will reduce the pressure on the natural forest and thereby conserve the biodiversity and improve the socio-economic condition of the rural poor.

The data were obtained through direct field visits and interviews of local medicinal men and farmers. The study revealed that there are many plant species traditionally used by the villagers for medicinal purpose. In the present study, 59 species of 53 genera from 28 families of medicinally important plant species were identified and their uses are described in Table 1. Among all the species, *Azadirachta indica*, *Cardiospermum halicacabum*, *Curcuma longa*, *Erythrina indica*, *Jatropha curcas*, *Moringa oleifera*, *Phyllanthus amarus*, *Solanum nigrum*, *Sesbania grandiflora*, *Tamarindus indica*, *Tridax procumbens*, *Vitex negundo* and *Zingiber officinale* are some of the most useful medicinal plants in their day-to-day life. These are taken internally, or applied externally in the form of infusion, decoction, paste or powder. Most of the plants used in medicines are either mixed with other ingredients or singly. The names of the ingredients are also mentioned in Table 1.

In view of greater importance of medicinal and herbal plants, many of the progressive farmers are switching to cultivation of these plants as they find it more profitable than traditional crops. In southern districts of Tamil Nadu, farmers are practicing mass cultivation of *Aloe vera*, *Azadirachta indica*, *Curcuma longa*, *Embllica officinalis*, *Eucalyptus tereticornis*, *Gloriosa superba*, *Moringa oleifera*, *Ricinus communis*, *Sesamum indicum*, *Sesbania grandiflora*, *Solanum americanum*, *Tamarindus indica* and *Zingiber officinale*.

Table 1
Medicinal plants with their botanical and vernacular names and plant parts used

Family	Botanical name	Vernacular name (Tamil)	Plant part uses
1	2	3	4
Acanthaceae	<i>Astracantha langifolia</i> Nees	Neermulli	The decoction of leaves and curry is made out of leaves are taken to stomach in the case of anaemia and oedema.
	<i>Adhatoda vasica</i> Nees	Adathoda	Leaf extract is taken internally to relieve cough and cure Asthma.
	<i>Andrographis paniculata</i> (Brum.f.) Wallich ex Nees	Sirianangai	Paste form of entire plant is applied externally for skin disease.
Amaranthaceae	<i>Achyranthes aspera</i> L.	Nayuruvi	The juice of the leaves is mixed with dried ginger and applied externally to cure eye injuries of cattle.
Anacardiaceae	<i>Mangifera indica</i> L.	Maa	The paste of the seed kernel is taken internally to cure ring worm infection.
Apiaceae	<i>Centella asiatica</i> (L.) Urban.	Vallarai	Leaf extract is taken internally to cure dysentery and improve the memory power.
Apocynaceae	<i>Catharanthus roseus</i> L.	Nithiyakalyani	Bark is used for cancer therapy.
	<i>Wrightia tinctoria</i> R. Br.	Veppalai	The juice of the leaves is mixed with lime and turmeric powder and later on externally applied to the swellings.
Areaceae	<i>Borassus flabellifer</i> L.	Panai	The toddy is internally taken as cooling beverage.
	<i>Cocos nucifera</i> L.	Thennai	The toddy is taken internally as cooling beverage.
Asclepiadaceae	<i>Calotropis gigantea</i> L.	Erukku	Warmed leaves are covered with cotton cloth on the painful parts of the body to cure rheumatic joint pains and swellings.
			The latex is applied around the thumbnails and leg for getting immediate relief from burning sensation while passing urine.
	<i>Hemidesmus indicus</i> L.	Nannari	The root powder is mixed with sugar water and taken internally as a cooling beverage.

Contd...

1	2	3	4
	<i>Pergularia daemia</i> L.	Velipparuthi	Bath with leaves boiled in water cure body pain.
Asteraceae	<i>Tridax procumbens</i> L.	Vettukkaya-poondu	The juice of leaves is applied externally for healing wounds.
Caesalpiniaceae	<i>Cassia auriculata</i> L.	Aavarai	The decoction of the bark is mixed with garlic and powdered pepper and later on given to cattle as purgative.
	<i>Cassia fistula</i> L.	Sarakkonnai	The decoction of the bark is mixed with garlic and powdered pepper and later on given to cattle as purgative.
	<i>Tamarindus indica</i> L.	Puli	The paste is made out of pulp of the fruit and mixed with lime and later on applied on the painful muscle swelling.
Cannabinaceae	<i>Cannabis sativa</i> L.	Ganja	Dried leaf smoke is temporary pain reliever.
Cucurbitaceae	<i>Coccinia indica</i> Wight & Arn.	Kovai	The juice of leaves mixed with salt and breast milk, is internally taken to cure the eye disease.
Euphorbiaceae	<i>Phyllanthus amarus</i> L.	Keelanelli	The entire plant and root extract is used to cure jaundice.
	<i>Phyllanthus emblica</i> Greatn.	Nelli	Fruit jelly is eaten in the case of dysentery.
	<i>Acalypha indica</i> L.	Kuppaimeni	The juice of leaves is applied externally for body itching.
	<i>Jatropha curcas</i> L.	Kattamanakku	The juice from the stem is gargled in order to subside the tooth ache and to cure angular stomatitis.
Fabaceae	<i>Ricinus communis</i> L.	Amanakku	Oil extracted from seed is used for cooling the body.
	<i>Erythrina indica</i> Lam.	Kalyana-muruigai	The paste of the leaves is applied on the wounds of the cattle for healing.
	<i>Abrus precatorius</i> L.	Kundumani	Seeds administered in affection of nervous system and their paste applied locally in sciatica, stiffness of shoulder joints and paralysis.
	<i>Pongamia pinnata</i> L.	Pungai	Bark and leaves is given internally to cattle for better digestion.
	<i>Sesbania grandiflora</i> (L.) Pers.	Akathi	The leaves are cooked and internally taken to get cooling effect to eyes.
	<i>Clitoria ternatea</i> L.	Sanku pushpam	Root paste is taken internally as cathartic and diuretic.
	<i>Teprosia purpurea</i> (L.) Pers	Kolingi	The root is chewed in stomach pain and poisonous bites.
			<i>Contd...</i>

1	2	3	4
Lamiaceae	<i>Ocimum basilicum</i> L.	Thirunee- trupachai	The juice of the leaves is applied as drops in ear pain.
	<i>Leucas aspera</i> L.	Thumpai	The juice of the leaves is mixed with turmeric powder and is applied externally around throat in tonsillitis.
	<i>Ocimum sanctum</i> L.	Thulasi	The juice of the leaves is mixed with cumin and given to cure dry cough.
	<i>Plectranthus ambonicus</i> (Lour.) Spreng.	Omavalli	Leaf is taken internally to cure whooping cough.
Liliaceae	<i>Aloe vera</i> L.	Kathalai	The fleshy leaves are ground with garlic into paste and given to cattle to increase digestion.
Lythraceae	<i>Lawsonia inermis</i> L.	Maruthani	Leaf paste is applied externally for hair growth and cooling effect.
Malvaceae	<i>Hibiscus rosa-sinensis</i> L.	Semparuthi	The paste of the leaves and flowers is applied externally for hair growth and cooling effect.
Meliaceae	<i>Azadirachta indica</i> A. Juss.	Veppam	Leaf extract and Neem oil is used to cure smallpox and skin diseases.
Mimosaceae	<i>Albizia amara</i> Boivin.	Usil	The paste of the powdered bark is applied externally for healing wounds.
	<i>Albizia lebbek</i> L. (Benth)	Vakai	Bark powder is mixed with unboiled milk of a goat, garlics, pepper and turmeric and then filtered. The juice thus obtained is taken internally to stomach to cure rheumatic joint pains.
Moringaceae	<i>Moringa oleifera</i> Lam.	Murungai	The bark of the stem is powdered and internally taken for antidote to poisonous bites.
Musaceae	<i>Musa paradisica</i> L.	Valai	The juice obtained from the central trunk is taken internally to remove kidney stone.
Myrtaceae	<i>Syzygium cumini</i> L.	Naval	Seed powder is taken internally to control diabetes.
	<i>Eucalyptus tereticornis</i> Smith	Thaila	Inhalation of leaf vapour in hot water to cure body pain.
Pedaliaceae	<i>Sesamum indicum</i> L.	Ellu	The paste of the leaves is mixed with water and then given post delivery pain of cattle.
			Contd...

1	2	3	4
Rutaceae	<i>Aegle marmelos</i> (L.) Corr.	Vilvam	Paste prepared from the ripened fruit pulp is applied on the head to get cooling effect of the eyes.
Solanaceae	<i>Feronia elephantum</i> Corr	Vilam	The fruit is eaten to check diarrhoea and dysentery.
	<i>Datura metel</i> L.	Umathai	Leaves are warmed with castor oil and applied externally for pus release and heal wounds. Leaf smoke cures asthma.
	<i>Solanum americanum</i> L.	Manathakkali	Leaf is cooked and taken internally to cure ulcer in the mouth and stomach.
	<i>Solanum torvum</i> Swartz.	Sundai	Unripened fruit is cooked and taken internally to eradicate intestinal worms.
Ulmaceae	<i>Solanum surattense</i> Burm .f.	Kandankathiri	The unripened fruits to be eaten to cure cough.
	<i>Withania somnifera</i> Dunal.	Asvakantha	Root paste is applied externally for inflammatory conditions ulcers and scabies
	<i>Solanum trilobatum</i> L.	Thoothuvalai	Leaf extract is taken internally to cure the cough.
	<i>Atrocarpus integrifolia</i> L.	Palaa	The milky juice is applied externally as antibiotic to dog bite.
Verbinaceae	<i>Ficus benghalensis</i> L.	Aala	The latex is given to children in fever and dullness.
	<i>Vitex negundo</i> L.	Nochi	The leaves are tied in a cloth and used as a pillow for immediate relief of headache. Inhalation of leaves vapour in hot water to cure sinus problem.
Zingiberaceae	<i>Zingiber officinale</i> Rose.	Ingi	The juice of the rhizome is taken internally for improve digestion.
	<i>Curcuma longa</i> L.	Manjal	The paste of the rhizome is applied externally to reduce body swelling.

Conclusions and Recommendations

Apart from the above species, there is a lot of scope to cultivate many other medicinal plants in this agro-climatic region. To bring more medicinal plant species in to cultivation and for their increased productivity, further research is

needed as regards systematic and scientific cultivation methods, which include organic farming, irrigation, harvesting and preservation and marketing. To improve the economic condition of rural poor and promote progressive farming, it is essential to impart necessary training to them in mass cultivation practices.

SUMMARY

Medicinal plant survey was carried out in remote villages of Madurai, Dindigul and Theni districts of Tamil Nadu, India. The study revealed that there are many plant species traditionally used by the villagers. Among these, 59 species of 53 genera from 28 families of medicinally important plants were identified and their uses were described in this article. Among the species *Azadirachta indica*, *Cardiospermum halicacabum*, *Erythrina indica*, *Gloriosa superba*, *Jatropha curcas*, *Moringa oleifera*, *Phyllanthus amarus*, *Sesbania grandiflora*, *Tamarindus indica*, *Tridax procumbens* and *Vitex negundo* are off the used medicinal plants in their day-to-day life, while *Aloe vera*, *Azadirachta indica*, *Curcuma longa*, *Embllica officinalis*, *Eucalyptus tereticornis*, *Gloriosa superba*, *Moringa oleifera*, *Ricinus communis*, *Sesamum indicum*, *Sesbania grandiflora*, *Solanum americanum*, *Tamarindus indica* and *Zingiber officinale* are commonly being cultivated by the farmers in the area.

तमिलनाडु के दक्षिणी जिलों के आम और कृषिकृत औषध पादप
तथा ग्रामीण द्वारा उनका उपयोग
के० राजेन्द्रन व टी० गुणाशेखरन्
सारांश

तमिलनाडु, भारत के मदुरै डिंडीगल और थेनी जिलों के सुदूरस्थ गांवों का औषध पादप सर्वेक्षण किया गया। इस अध्ययन से पता चला कि बहुत-सारी पादप जातियां ऐसी हैं जिन्हें ग्रामीण जन परम्परा से उपयोग करते चले आ रहे हैं। इनमें से 28 कुलों की 53 प्रजातियों की 59 औषध दृष्टि से महत्वपूर्ण जातियों की पहचान और उनके उपयोग प्रस्तुत अभिपत्र में बताए गए हैं। इन जातियों में *अजोडिरेक्टा इण्डिका*, *कार्डियोस्पर्मम हैलिकाकाबुम*, *एरिथ्रिना इण्डिका*, *ग्लोरिओसा सुपरबा*, *जात्रोफा कुर्कास*, *मोरिंगा ओलेइफेरा*, *फायलैन्थस एमारस*, *सेस्बानिया ग्रांडिलोरा*, *टैमेरिण्डस इण्डिका*, *ट्राइडैक्स प्रोकम्बेंस* और *वाइटेक्स नेगुण्डो* उनकी दिनानुदिन चिकित्सा में उपयोग होने वाले सामान्य पादप हैं। किन्तु *ऐलो वीरा*, *अजोडिरेक्टा इण्डिका*, *कुर्कुमा लौंगा*, *फायलैन्थस एम्ब्लिका*, *एम्ब्लिका ऑफिसिनेलिस*, *युकैलिप्टस टरेटिकार्निस्*, *ग्लोरिओसा सुपरबा*, *मोरिंगा ओलेइफेरा*, *रिसिनस कम्युनिस*, *सेसामम इण्डिकम*, *सेस्बानिया ग्रांडिलोटा*, *सोलेनम अमेरिकानम*, *टैमेरिण्डस इण्डिका* और *जिंजीबेर आफिसिनेलिस* की आमतौर से इस क्षेत्र में किसानों द्वारा कृषि की जाती है।

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