

## Medicinal plants and their utilization by villagers in southern districts of Tamil Nadu

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Medicinal plant survey was carried out in remote villages of Madurai, Dindigul and Theni districts of Tamil Nadu. Of many plant species traditionally used by the villagers, 59 plant species belonging to 53 genera from 28 families of medicinally important plants were identified and their uses are described. 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 used in their daily life. While *Aloe vera*, *Azadirachta indica*, *Curcuma longa*, *Emblica officinalis*, *Eucalyptus tereticornis*, *Gloriosa superba*, *Moringa oleifera*, *Ricinus communis*, *Sesamum indicum*, *Sesbania grandiflora*, *Solanum americanum*, *Tamarindus indica* and *Zingiber officinale* are commonly cultivated.

**Keywords:** Medicinal plants, Traditional medicine, Ethnomedicine, Tamil Nadu

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India is a veritable emporium of medicinal and aromatic plants. It has been estimated that out of 15,000 higher plants occurring in India, 9,000 are commonly useful, of which 7,500 are medicinal, 3,900 are edible, 700 are culturally important, 525 are used for fibre, 400 are fodder, 300 for pesticide and insecticide, 300 for gum, resin and dye and 100 for incense and perfume<sup>1</sup>. In terms of the plant materials for traditional medicine, it is estimated that local communities has used over 7,500 plants species. Indian flora has innumerable medicinal plants, which are collected from forest by the tribal villagers. Many of them are being exported to the developed countries<sup>2</sup>. Since ancient time, mankind depended mainly on the plant kingdom to meet its need for medicine, fragrance and flavours. 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<sup>3</sup>. Apart from meeting its domestic requirement, the country exports large quantities of medicinal and aromatic plants and derivatives. There is a considerable scope for India to contribute towards

the increasing worldwide demand for medicinal and aromatic plant products<sup>3</sup>. Usage of plants in medicine had been a long practice by man from ancient times. This practice of using plants in medicine is still prevailing not only among the tribals and others living in the rural areas. The survey was carried out in remote villages to identify the common and cultivated medicinal plants and their utilisation by tribals in southern district of Tamil Nadu. The study area selected in Madurai, Dindigul and Theni districts of Tamil Nadu is located at 10° 05' N latitude and 78° 16' E longitudes at an elevation of 132 m above msl and the temperature ranged from 30-38°C.

### Methodology

Survey conducted and information regarding the existing medicinal plants and their local name, plant parts, method of use medicinal use was recorded with the help of aged farmers and local people. The data were obtained through direct field visits and interviews of local medicinal men and farmers. Botanical name of species, local name, family and their uses were authenticated<sup>5</sup>.

### Results and discussion

The study revealed that there are many plant species traditionally used by the villagers for

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medicinal purpose. In the study 62 species belonging to 55 genera from 30 families of medicinally important plant species were identified and their uses are described (Table 1). Among all the species, *Azadirachta indica*, *Cardiospermum halicacabum*, *Curcuma longa*, *Erythrina varigata*, *Jatropha curcas*, *Moringa oleifera*, *Phyllanthus amarus*, *Solanum nigrum*, *Sesbania grandiflora*, *Tamarindus indica*, *Tridax procumbens*, *Vitex negundo* and *Zingiber*

*officinale* are used in daily life (Fig. 1). These are taken internally, or applied externally in the form of infusion, decoction, paste or powder. Most of the plants used in medicine are either mixed with other ingredients or used singly. In view of greater importance of medicinal and herbal plants, many of the progressive farmers are switching over to cultivation of these plants as they found it to be more profitable than traditional crops. In southern districts

Table 1—Medicinal plants used by the villagers in southern districts of Tamil Nadu

Plant name/ Family	Vernacular name (Tamil)	Uses
<i>Hygrophila auriculata</i> (Schum.) Heine Acanthaceae	<i>Neermulli</i>	Leaf decoction and curry are taken orally in the case of anemia and edema.
<i>Adhatoda zeylanica</i> Medikus Acanthaceae	<i>Adathoda</i>	Leaf extract is taken internally to relieve cough and cure asthma.
<i>Andrographis paniculata</i> (Brum.f.) Wallich ex Nees Acanthaceae	<i>Sirianangai</i>	Plant paste is applied externally for skin disease.
<i>Achyranthes aspera</i> L. Amaranthaceae	<i>Nayuruvi</i>	Fresh leaf juice mixed with dried ginger is applied externally to cure eye injuries and infections of cattle.
<i>Mangifera indica</i> L. Anacardiaceae	<i>Maa</i>	Seed kernel is taken internally to cure ring worm infection.
<i>Centella asiatica</i> (L.) Urban. Apiaceae	<i>Vallarai</i>	Leaf extract is taken orally to cure dysentery and improve memory power.
<i>Catharanthus roseus</i> (L.) Don Apocynaceae	<i>Nithiyakalyani</i>	Dry bark powder is used for cancer therapy.
<i>Wrightia tinctoria</i> (Roxb.) R. Br. Apocynaceae	<i>Veppalai</i>	Leaf juice mixed with lime and turmeric powder is applied externally to the swellings.
<i>Borassus flabellifer</i> L. Arecaceae	<i>Panai</i>	Fresh toddy is taken orally as cooling beverage.
<i>Cocos nucifera</i> L. Arecaceae	<i>Thennai</i>	Fresh toddy is taken orally as cooling beverage.
<i>Calotropis gigantea</i> (L.) R. Br Asclepiadaceae	<i>Erukku</i>	Warmed leaves covered with cotton cloth are tied on the painful parts of the body to cure rheumatic joints pain and swellings. Latex is applied externally around the thumb nails and leg for getting immediate relief from burning sensation while passing urine.
<i>Hemidesmus indicus</i> (L.) R. Br Asclepiadaceae	<i>Nannari</i>	Dry root powder mixed with sugar solution in water is taken orally as a cooling beverage.
<i>Pergularia daemia</i> (Forsk.) Chiov. Asclepiadaceae	<i>Velipparuthi</i>	Bath with leaf decoction is taken to cure body pain.
<i>Tridax procumbens</i> L. Asteraceae	<i>Vettukkayapoondur</i>	Leaf juice is applied externally for healing wounds.
<i>Cassia auriculata</i> L. Caesalpinaceae	<i>Aavarai</i>	Stem decoction mixed with garlic and powdered pepper is given to cattle as purgative.
<i>Cassia fistula</i> L. Caesalpinaceae	<i>Sarakkonnai</i>	Bark decoction mixed with garlic and powdered pepper is given to cattle as purgative.
<i>Tamarindus indica</i> L. Caesalpinaceae	<i>Puli</i>	Fresh fruit pulp paste mixed with lime is applied on the painful muscle swelling.
<i>Cannabis sativa</i> L. Cannabinaceae	<i>Ganja</i>	Dried leaf smoke is temporarily used as pain reliever.
<i>Coccinia grandis</i> (L.) Voight. Hort. Cucurbitaceae	<i>Kovai</i>	Fresh leaf juice mixed with salt and breast milk is taken orally to cure eye disease.

Table 1—Medicinal plants used by the villagers in southern districts of Tamil Nadu—*Contd.*

Plant name/ Family	Vernacular name (Tamil)	Uses
<i>Phyllanthus amarus</i> Schum & Thonn. Euphorbiaceae	<i>Keelanelli</i>	Plant extract is used to cure jaundice.
<i>Phyllanthus emblica</i> L. Euphorbiaceae	<i>Nelli</i>	Fruit jellies are taken as such to cure dysentery.
<i>Acalypha indica</i> L. Euphorbiaceae	<i>Kuppaimeni</i>	Leaf juice is applied externally for curing body itching.
<i>Croton bonplandianus</i> Baillon Euphorbiaceae	<i>Milakaipoondu or Venapoondu</i>	Plant latex is used to cure wounds.
<i>Jatropha curcas</i> L. Euphorbiaceae	<i>Kattamanakku</i>	Fresh stem juice is gargled to cure toothache and angular stomatitis, plant latex is used to cure headache.
<i>Ricinus communis</i> L. Euphorbiaceae	<i>Amanakku</i>	Seed oil is used for cooling the body during fever.
<i>Erythrina variegata</i> L. Fabaceae	<i>Kalyanamuruigai</i>	Fresh leaf paste is applied on the wounds of the cattle for healing.
<i>Abrus precatorius</i> L. Fabaceae	<i>Kundumani</i>	Seeds are administered in affection of nervous system and paste is applied locally in sciatica, stiffness of shoulder joints and paralysis.
<i>Pongamia pinnata</i> (L) Pierre. Fabaceae	<i>Pungai</i>	Bark and leaf powder is given orally to cattle for better digestion.
<i>Sesbania grandiflora</i> (L.) Poiret. Fabaceae	<i>Akathi</i>	Cooked leaves are taken to get cooling effect to infected eyes.
<i>Clitoria ternatea</i> L. Fabaceae	<i>Sanku pushpam</i>	Root paste is taken orally as cathartic and diuretic.
<i>Tephrosia purpurea</i> (L.) Pers. Fabaceae	<i>Kolingi</i>	Fresh root is chewed in stomach pain and poisonous bites.
<i>Ocimum basilicum</i> L. Lamiaceae	<i>Thiruneertrupachai</i>	Leaf juice is used as drops in ear pain.
<i>Leucas aspera</i> (Willd.) Link. Enum. Lamiaceae	<i>Thumpai</i>	Fresh leaf juice mixed with turmeric powder is applied externally around throat tonsillitis.
<i>Ocimum tenuiflorum</i> L. Lamiaceae	<i>Thulasi</i>	Leaf juice mixed with cumin is given to cure the dry cough.
<i>Plectranthus amboinicus</i> (Lour.) Spreus. Lamiaceae	<i>Omavalli</i>	Leaf is taken orally to cure whooping cough.
<i>Aloe vera</i> (L.) Burm. f. Liliaceae	<i>Kathalai</i>	Leaf paste with garlic is given to cattle to increase digestion.
<i>Gloriosa superba</i> L. Liliaceae	<i>Kalappaikkilangu</i>	Seed and tubers are used mainly for treating gout and rheumatism.
<i>Lawsonia inermis</i> L. Lythraceae	<i>Maruthani</i>	Leaf paste of dried leaves is applied externally as hair tonic and cooling effect.
<i>Hibiscus rosa-sinensis</i> L. Malvaceae	<i>Semparuthi</i>	Leaf and flower paste is applied externally for hair growth and cooling effect.
<i>Azadirachta indica</i> A. Juss. Meliaceae	<i>Veppam</i>	Leaf extract along with neem oil is used to cure small pox and skin diseases.
<i>Albizia amara</i> (Roxb) Boivin. Mimosaceae	<i>Usil</i>	Stem bark paste is applied externally for healing wounds.
<i>Albizia lebbek</i> L. (Benth) Mimosaceae	<i>Vakai</i>	Bark powder mixed with unboiled goat milk, garlic, pepper and turmeric is given orally to cure rheumatic joints pain.
<i>Ficus benghalensis</i> L. Moraceae	<i>Aala</i>	Latex is given to children in fever and dullness.
<i>Artocarpus heterophyllus</i> Lam. Moraceae	<i>Palaa</i>	Milky latex is applied externally as antibiotic to dog bite.
<i>Moringa oleifera</i> Lam. Moringaceae	<i>Murungai</i>	Powdered stem bark is taken orally as an antidote to poisonous bites.

*Contd.*

Table 1—Medicinal plants used by the villagers in southern districts of Tamil Nadu—*Contd.*

Plant name/ Family	Vernacular name (Tamil)	Uses
<i>Musa paradisiaca</i> L. Musaceae	<i>Valai</i>	Juice obtained from central trunk is taken orally to dissolve the kidney stone.
<i>Syzygium cumini</i> (L.) Skeels Myrtaceae	<i>Naval</i>	Seed powder is taken orally to control diabetes.
<i>Eucalyptus tereticornis</i> Smith Myrtaceae	<i>Thaila</i>	Inhalation of leaves vapour in hot water cures body pain.
<i>Sesamum indicum</i> L. Pedaliaceae	<i>Ellu</i>	Leaf paste mixed with water is given to cure post delivery pain of cattle.
<i>Aegle marmelos</i> (L.) Correa. Rutaceae	<i>Vilvam</i>	Ripened fruit pulp paste is applied on head to get cooling effect of eyes.
<i>Limonia acidissima</i> L. Rutaceae	<i>Vilam</i>	Fresh fruit juice is taken to check diarrhoea and dysentery.
<i>Cardiospermum helicacabum</i> L. Sapindaceae	<i>Mudakkathan</i>	Plant leaf extract reduces body pain. Decoction of whole plant is used for curing rheumatism.
<i>Datura metel</i> L. Solanaceae	<i>Umathai</i>	Leaves warmed with castor oil and tied externally releases pus and heal wounds. Leaf smoke cures asthma.
<i>Solanum nigrum</i> L. Solanaceae	<i>Manathakkali</i>	Cooked leaves are taken orally to cure ulcer in the mouth and stomach.
<i>Solanum torvum</i> Swartz. Solanaceae	<i>Sundai</i>	Unripe cooked fruits are taken orally to eradicate intestinal worms.
<i>Solanum virginianum</i> L. Solanaceae	<i>Kandankathiri</i>	Unripe fruits are eaten to cure cough.
<i>Solanum trilobatum</i> L. Solanaceae	<i>Thoothuvalai</i>	Leaf extract is taken orally to cure cough.
<i>Withania somnifera</i> Dunal. Solanaceae	<i>Asvakantha</i>	Root paste is applied externally for ulcers, inflammatory conditions and scabies.
<i>Vitex negundo</i> L. Verbenaceae	<i>Nochi</i>	Leaves are tied in a cloth and made as a pillow in case of immediate relief from headache. Inhalation of leaf vapour in hot water cures sinus problem.
<i>Zingiber officinale</i> Rose. Zingiberaceae	<i>Ingi</i>	Fresh rhizome juice is taken internally for improving digestion.
<i>Curcuma longa</i> L. Zingiberaceae	<i>Manjal</i>	Rhizome paste is applied to reduce body swelling and for healing of wounds.
<i>Tribulus terrestris</i> L. Zygophyllaceae	<i>Nerunji</i>	Leaf juice is used for jaundice.

of Tamil Nadu, farmers are practicing mass cultivation of *Aloe vera*, *Azadirachta indica*, *Curcuma longa*, *Phyllanthus emblica*, *Eucalyptus tereticornis*, *Gloriosa superba*, *Moringa oleifera*, *Ricinus communis*, *Sesamum indicum*, *Sesbania grandiflora*, *Solanum americanum*, *Tamarindus indica* and *Zingiber officinale*. To bring more medicinal plant species into 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 enhance the economic condition of rural poor and progressive farmers, it is essential to impart necessary training to them in mass cultivation practices.

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#### References

- 1 Anonymous, *Ethnobotany in India, A Status report*, All India coordinated research project in ethnobotany, (Ministry of Environment Forests, Government of India, New Delhi), 1994.
- 2 Anonymous, *Annual Report*, (Indian Council of Forestry Research and Education, Dehradun), (1992-1993), 193-207.
- 3 Anonymous, Indian Council of Forestry Research and Education, *Success story-Cultivation of Medicinal plants*, *Envis Newslett*, 1 (2) (2002) 5.
- 4 Anonymous, *The Useful Plants of India*, (Publications and Information Directorate, New Delhi), 1992.
- 5 Mathew KM, *An excursion flora of Central Tamil Nadu, India* (Oxford and IBH Publishing Co Pvt Ltd, New Delhi), 1991.