



Ethnobotanical studies on useful plants of Sirumalai Hills of Eastern Ghats, Dindigul District of Tamilnadu, Southern India

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Abstract

The present investigation is an attempt to an ethnomedicinal plants survey carried out in Sirumalai Hills of Eastern Ghats, Dindigul district of Tamilnadu. The indigenous information of the village dwellers, tribal people, village herbalists, herbal practitioners and other traditional healers and the indigenous plants used for medicinal worthiness were collected through personal interviewes and questionnaire during field trips. The exploration revealed some unknown medical uses of medicinal plants. The locals use 44 medicinal plants for the treatment of several diseases either in single or in combination with some other ingredients. The information on correct botanical identities with family, vernacular name (Tamil), part used and traditional practice of 44 species, 40 genera and 28 families of angiosperms are discussed here for the treatment of various illnesses viz., asthma, snake bite, anthelmintic, promote coolness antipyretic, jaundice, diarrhoea, dysentery, leprosy, diuretic, diabetes, stomachache problems, paralysis and skin diseases. The dicotyledons are represented by 41 species of 37 genera and 25 families while monocotyledons are represented by 3 species of 3 genera and 3 families. The plant parts are used in the form of juice, extract, powder and paste. These uses are noteworthy for further investigation on recent scientific manner. The present study concluded that the abundance of natural ethnomedicinal information of medicinal plants may also points to a excellent potential for investigation in the discovery new medicines to fight ailments and other new uses.

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Introduction

Medicinal plants are largely used by all divisions of the population either directly as folk medicines or indirectly in the preparation of current pharmaceuticals (Qasim *et al.*, 2010). Indian subcontinent is praised with most varied and diverse soil and climate conditions suitable for the growth of veracious plant species. India is very rich in ethnobotanical information. India is known for its rich biodiversity of Medicinal plants and hence called botanical garden of the world (Vedavathy *et al.*, 1997). Nearly 70 percent of the world population is dependent on the traditional medicines for primary health care (Shinwari, 2010). Plants have been used in traditional medicine for several thousand years (Abu-Rabia, 2005). The knowledge of medicinal plants has been accumulated in the course of many centuries (Shinwari and Ayaz, 2002), based on different medicinal systems such as Ayurveda, Unani and Siddha. In India it is reported that traditional healers use 2500 plant species and 100 species serve as regular sources of medicine (Pei, 2001).

Medicinal plants are the basic health care of rural households form the resource base for rapidly growing pharmaceutical industry and cosmetic (Adnan *et al.* 2010). In recent years, there has been a tremendous range of interest in the medicinal plants especially those used in Ayurveda, Siddha, Unani, Modern, Arnchi, Homeopathy and Naturopathy (Shinwari *et al.* 2006). Drugs obtained from plant are believed to be much safer and exhibit a remarkable efficacy in the treatment of various ailments. (Siddique *et al.* 1995). The folk medicinal traditions play a reflecting and prominent role in human and environment interaction. (Chopra *et al.* 1956; Shinwari and Gilani, 2003).

The investigation region Sirumalai Hills is located in Dindigul district of Tamilnadu between 10°07' - 10°18' N latitude and 77°55' - 78°12' E longitude. The rainfall regime is a tropical dissymmetric type with the bulk of rain received during the retreating monsoon period

(October-December) due to depression and cyclones (Meher –Homji, 1973). In the lack of detailed report traditional medicine in Sirumalai Hills, Dindigul district, Tamilnadu. There is not much knowledge was available on the literature about the medicinally essential except a few studies (Wikneshwaran *et al.*, 2008; Maruthupandian and Mohan, 2010; Maruthupandian *et al.*, 2011). Therefore, this exploration was undertaken in method to ascertain the detailed information on ethnomedicinal plants used by tribal (Paliyars/Paliyan) and non-tribal people. Alike ethnomedicinal studies have been reported in various parts of India to conserve the traditional information from disappearing (Pushpangadan and Ata, 1984; Natarajan *et al.*, 2000; Jain, 2001). Documenting the domestic information through ethnobotanical studies is notable for the conservation of biological resources as well as their sustainable utilization. The present investigation focuses was performed with the aim of producing an inventory of the plants used by traditional healers in Sirumalai Hills of Tamilnadu to treat various ailments.

Materials and methods

Periodic field trips for ethnobotanical exploration were undertaken during June 2007 to January 2008 in Sirumalai Hills of Dindigul district. During the surveys personal interviewed were conducted with the tribal people (Paliyar), the herbal medicine practitioners, village dwellers and other traditional healers as already reported by several authors (Gilani *et al.*, 2007; Shinwari *et al.*, 2005). Each of the plant material was assigned field book number and documented as to family, scientific name, vernacular name (Tamil), part used and medicinal uses. Plant parts that were identified as having use in ethnobotany were collected and compressed. Plant species collected were identified with the help of flora books. (Hooker, 1884; Gamble, 1936; Henry *et al.*, 1987; Matthew, 1983). All the voucher specimens are deposited in the herbarium of Botany Department, Government Arts

College, Salem. It was found that some of the present information has not so far been available in literature.

Table 1. List of medicinal plants and their uses.

Scientific Name	Vernacular Name (Tamil)	Medicinal Uses
<i>Abutilon indicum</i> Sweet. (Malvaceae).	Thuthi	Leaf juice of the plant is dropped in the ear-ache and used in the treatment of asthma.
<i>Achyranthes aspera</i> L. (Amaranthaceae).	Nayuruvi.	The root paste is used in toothache. Leaf paste is applied as an ointment for piles.
<i>Adhatoda zeylanica</i> Medi. (Acanthaceae)	Adathoda	The leaf juice is taken orally to treat asthma and cough.
<i>Aloe barbadensis</i> Mill (Liliaceae).	Chottu Kaththalai	Plant paste applied externally in promote coolness.
<i>Alpinia galanga</i> Willd. (Zingiberaceae).	Perarattai	Two teaspoons of dried rhizome powder is mixed with honey and given once a day for 2 days for stomach upset digestion in children.
<i>Andrographis echioides</i> Nees. (Acanthaceae).	Gopuramthangi	Leaf juice is mixed with hot water and given for snake bite, eczema and anthelmintic.
<i>Andrographis ovata</i> Benth. ex. C.B. Clarke. (Acanthaceae).	-	Leaves decoction taken orally with water in antipyretic, jaundice, snake bite and scorpion sting.
<i>Andrographis paniculata</i> Nees (Acanthaceae).	Chiriyangai	The whole plant paste applied externally in skin diseases, snake bite and poisonous bites.
<i>Anisomeles malabarica</i> R.Br. (Labiatae).	Peythumbai	The leaf paste for chronic wounds.
<i>Argemone mexicana</i> L. (Papaveraceae).	Brahamathandu	Yellow juice of plant is mixed with honey and given for ulcers.
<i>Aristolochia bracteolata</i> Lam. (Aristolochiaceae).	Aduthinnapalai	Leaves paste applied externally in dandruff and skin diseases.
<i>Aristolochia indica</i> L. (Aristolochiaceae).	Eswaramooligai	Leaves paste taken orally with hot water in eczema and stomach problems. The juice of the root is employed in poisonous bites.
<i>Asparagus racemosus</i> Willd. (Asparagaceae).	Thaneervittankizhangu	Root juice is mixed with Cow's milk are given in diarrhoea and dysentery.
<i>Calophyllum inophyllum</i> L. (Clusiaceae).	Punnai	Seed oil applied externally in rheumatism and skin disease. Bark juice is used to cure purgative.
<i>Calotropis gigantea</i> R.Br. (Asclepiadaceae).	Erkku	Latex is applied wounds.
<i>Cassia fistula</i> L. (Caesalpinioideae).	Sarakkonnai	Decoction of the bark is mixed with garlics and black pepper given to purgative, and astringent.
<i>Cissus quadrangularis</i> L.	Pirandai	Paste of leaves is mixed with chilly and salt given

(Vitaceae).		twice a day for 3 days for appetite in livestock.
<i>Cocculus hirsutus</i> Diels. (Menispermaceae).	Kattukkodi	Leaf juice used in refrigent and eczema. Roots decoction is given for rheumatism and stomachache problems.
<i>Commelina benghalensis</i> L. (Commelinaceae).	Kanavazhi	The rhizome and leaves juice used as emollient and leprosy.
<i>Crateva adansonii</i> DC (Caparaceae).	Mavilingam	50ml of bark decoction is taken orally in laxative and urinary discharges. Flowers for astringent.
<i>Cynodon dactylon</i> Pers (Poaceae).	Arugampullu	50 ml of plant decoction is taken orally to cure diuretic. The rhizome of juice mixed with water to drink which cure urinary disorders.
<i>Datura metel</i> L. (Solanaceae).	Karuomathai	Flowers dried in shade and flower powder is given for asthma. Leaf juice mixed with coconut oil applied externally in wound healing.
<i>Eclipta prostrata</i> L. (Compositae).	Karichalankanni	Leaves paste mixed with oil of coconut is applied for dandruff and blackening gray hair.
<i>Erythrina variegata</i> L. (Papilionoidaeae).	Kalyanamurungai	Leaf past is applied externally to treat wounds in cattle.
<i>Ficus glomerata</i> Roxb. (Moraceae).	Athi	Leaves juice is given in bilious problems. Roots are used in diarrhoea and diabetes. The decoction of bark is used to cure renderpest disease and vulnerary in cattle.
<i>Glycyrrhiza glabra</i> L. (Papilionoideae).	Atimathuram	The root powder mixed with hot water to drink which cure throat pain. The leaf juice is applied on cracks lips.
<i>Gymnema sylvestre</i> R.Br. (Asclepiadaceae).	Sirukurinchan	50ml of leaf juice is mixed with cow's milk and given once a day for 21 days for diabetes.
<i>Hemidesmus indicus</i> R.Br. (Asclepiadaceae).	Nannari	The root powder mixed sugar water is given to promote coolness.
<i>Hybanthus enneaspermus</i> F. Muell (Violaceae).	Orithalthamarai	The root powder mixed with black pepper and drink to treat urinary disorders. Leaf juice is mixed with goat's milk to drink which cure bowel complaints.
<i>Hygrophila auriculata</i> Heine. (Acanthaceae),	Neermulli	The leaf decoction is given in stomachache problems, anemia and edima.
<i>Jatropha curcas</i> L. (Euphorbiaceae).	Kattamanakku	Latex is applied externally in paralysis, skin diseases and rheumatism. Leaf juice taken orally with goat's milk in scabies and ringworm.
<i>Morinda tinctoria</i> L. (Rubiaceae).	Manjanatti	Decoction of the leaves is taken to treat stomachache problems and dysentery in children.
<i>Opuntia dillenii</i> Haw.	Sappatikalli	Decoction of the fruit is used as whooping cough,

(Cactaceae).		ophthalmia, spasmodic cough and expectoration.
<i>Oxalis cormiculata</i> L. (Oxalidaceae).	Puliyarai	Leaf juice is given to piles and anemia. Leaf juice is mixed with honey and given for coneract Datura poisoning.
<i>Papaver somniferum</i> L. (Papaveraceae).	Gashagasha	Poppy seed oil used orally for 4 days in culinary purposes and free from norcotic action. Seed powder is mixed with hot water is given to arrest diarrhoea, dysentery and irriating cough.
<i>Phyllanthus emblica</i> L. (Euphorbiaceae).	Nelli	The fruit juice is mixed castor oil, which cures cooling, diuretic, laxative and purgative.
<i>Plumbago zeylanica</i> L. (Plumbaginaceae).	Chitramoolam	Root dried powder is mixed with goats' milk to get relief from frequent urination.
<i>Sesbania grandiflora</i> Pers. (Papilionoideae).	Agathi	50ml of leaf decoction is taken orally in empty stomach for dysentery, eliminate worms and stomach pain.
<i>Sesbania seasban</i> Merr. (Papilionoideae).	Vernacular name Chithagathi	Decoction of the leaf is mixed with hot milk and given once a day for 7 days for diarrhoea, itches and skin diseases.
<i>Solanum torvum</i> Sw. (Solanaceae).	Sundai	Dried fruit power is used in eradicate intestinal worms and diarrhoea.
<i>Streblus asper</i> Lour. (Moraceae).	Puraamaram	Five gram leaf powder with honey is used five days to cure ulcers. Latex is applied externally for antiseptic. Seeds in the form of paste are applied in leucoderma.
<i>Vernonia cinerea</i> Less. (Compositae).	Sahadevishanglamir	The leaf juice mixed with hot water is used in malaria. Roots are used in anthelmintic, diarhoea and stomachache. Leaf juice is mixed with cow's milk are given in antipyretic, rheumatism and cough.
<i>Vitex negundo</i> L. (Verbenaceae).	Nochi	Leaf paste applied externally in headache. Leaf juice is mixed with hot water and drink to treat cough.
<i>Withania somnifera</i> Dun. (Solanaceae).	Asvakantha,	Root paste applied externally in anti-inflammatory. Root powder is mixed with honey and given for ulcers and scabies.

Results and discussion

During present observations and interaction with the tribal people, the herbal medicine practitioners, village dweller and other traditional healers of Sirumalai Hills, 44 angiospermic plants were enumerated with their

medicinal importance. Out of 44 plant species studied, 3 is monocot and 41 is dicot. Three species namely, *Andrographis echioides*, *Andrographis lineata* and *Andrographis ovata* are used to treat snake bite. Several species are used for piles, skin disease, ulcer,

stomach ache problems, cough, headache, anemia, edema, rheumatism, purgative, dysentery, leprosy, laxative, astringent, urinary disorders, paralysis, scabies and diuretic etc. as already reported (Yousuf *et al.*, 2006). Some of them are used as anthelmintic, antipyretic, anti-inflammatory, jaundice, scorpion sting, promote coolness, fever and antiseptic also. People also make use of *Ficus glomerata* and *Gymnema sylvestre* are used to treat diabetes (Shinwari *et al.* 2006). Plants like *Abutilon indicum*, *Adhatoda zeylanica* and *Datura metel* are used to manage asthma (Shinwari *et al.*, 2009). Diarrhoea is treated effectively with *Papaver somniferum*, *Sesbania sesban*, *Solanum torvum*, *Vernonia cinerea* and *Asparagus racemosus* (Hussain *et al.*, 2009). The utility lies through their roots, bark, latex, leaves, fruits and seeds. These are taken internally or applied externally in the form of juice, decoction, paste or powder (Shinwari *et al.*, 2003). Most of the plants used in medicines are either mixed with other ingredients or single. While doing this there are reports of phytotoxicity which needs to be monitored (Gilani *et al.*, 2010). The regional people had a significant information about the species and suitable period of collection (Alagesaboopathi, 2009). There are considerable economic benefits in the progress of indigenous medications and in the use of medicinal plants for the treatment of several ailments (Alagesaboopathi, 2009; Francis Xavier *et al.*, 2011). Some important medicinal plants needs immediate conservation and their cultivation should be encouraged through which their extinction can be prevented and tribal people may also get low-cost cure their disease. There is a need to have modern way of identification of plants ensuring correct use of species (Shinwari and Shinwari, 2010).

Enumeration

The plant species are arranged in alphabetical order. Each plant is followed by its family, vernacular name (Tamil). The medicinal uses are described with details such as the part(s) used singly, combination with other

ingredients or mixed with other plants, methods of preparation and mode of administration (Table 1). The following is the list of 44 plants studied.

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