



Ethnobotanical Studies on useful Plants of Kanjamalai Hills of Salem district of Tamil Nadu, Southern India

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ABSTRACT

The present investigation is an attempt to an ethnomedicinal plants of Kanjamalai Hills of Salem district of Tamilnadu. The indigenous information of the village herbalists, village dwellers, herbal practitioners and other traditional healers and the indigenous plants used for medicinal utility were collected through personal interviewed and questionnaire during fied trips. The exploration revealed some unknown medical uses of medicinal plants. The scientific name, family, vernacular name (Tamil), part used, mode of drug preparation, dosage and duration was also reported and traditional usage of 44 species belonging to 39 genera and 24 families of angiosperms are discussed here for the treatment of several diseases viz., snake bite, scorpion bite, antipyretic, asthma, skin disease, high blood pressure, diabetes, jaundice and leprosy. The dicotyledons are represented by 40 species of 35 genera and 22 families while monocotyledons are represented by 4 species of 4 genera and 2 families. 90.91 percentage dicotyledons and 9.09 percentage monocotyledons were recorded.

Keywords : Medicinal plants, Kanjamalai Hills, Ethnomedicine, Traditional practice, Salem.

INTRODUCTION

Medicinal plants have been an integral part of life in various regional communities for food and drug both. India has more than 3,000 years of medicinal heritage based on medicinal plants. Medicinal plants are largely used by all divisions of the population either directly as folk medications or indirectly in the preparation of recent pharmaceuticals. Indian subcontinent is praised with most varied and diverse soil and climate conditions suitable for the growth of veracious plant species. The native people are acquainted with the properties and use of plants of their surroundings. People depend on the forest resources for several purposes like for timber, wood, non-timber forest products, medications, food etc[1]. Plants have been used as medicines for thousands of years and are used today in their natural as well as processed from several medicinal plants which have been forgotten by current man as a conclusion of his dependence on the quick results of allopathic medicines and are being rediscovered because of growing awareness of unwanted side effects and other attitudes of the later[2,3]. Plants have always been

the principle of drugs and have numerous uses to mankind. According to some previous workers[4-8]. Plants have been used in traditional medication for many thousand years[9].

The information of medicinal plants have been accumulated in the course of several centuries based on various medicinal systems such as Ayurveda, Homeopathy, Naturopathy, Amchi, Modern, Siddha and Unani. In India, it is declared that traditional healers use 2500 plant species and 100 species of plants serve as natural principles of medicine[10]. India is one of the twelve-megabiodiversity centers with 2 hot-spots of biodiversity in the Northeastern Region and Western Ghats. Ethnobotanical knowledge has been reported from several parts of Indian sub-continent[11-14]. Salem district of Tamilnadu is one of the most botanised areas of Southern India. The district is mountaineous in description. Enumerated below are some notable Hills. They are Shevaroy Hills, Kumaragiri Hills, Palamalai, Bodamalai, Suriyamalai, Kalvarayan and Kanjamalai Hills. The district is well for its peculiar assemblage of vegetarian wealth.

Kanjamalai, the Shrine of Lord Siddheswara Swamy is situated in the North Western foothill, 16 kilometers away from the city of Salem and nearer to Salem Steel Plant. It lying in between 11° 37' 24" North latitude and 78° 4' 5" East longitude of Eastern Ghats. The climatic data of this hill range are as follows – annual mean rainfall : 70 mm; temperature varies between 20°C to 37°C and relative humidity 76 to 90 percent with an elevation range of 350-986 m from m.s.l. The trees in this region are very small with stunted growth. The forests are mostly of a mixed deciduous and irregular type of varying density. They may be classified into three groups, namely the forest of the plains, the forests of the upper slopes and the plateau forests including those growing upto an elevation of 980 m. A bare, rocky mountain (8 sq.km. long, 3 sq.km. wide). It derives its name from Kanju (gold) that was reportedly found on it and in its streams, Ponni Aru and Kandha Nadhi. The streams are known as Siddhar Aruvi as the mountain is intimately connected with the Tamil Siddhars. When it was forested in the past, the mountain was reputed for another kind of gold-alchemical and medicinal plants of various kinds. Even now, alchemists from different parts of the country visit the mountain. Previously there is no specific data on the medicinal plants of this Hills.

In the present investigation 44 medicinal plant species were surveyed to assess their therapeutic importance in managing several ailments. Ethnomedicinal exploration was conducted in the various localities of the Kanjamalai Hills and numbers of valuable data on the uses of indigenous medicinal plants were encountered.

MATERIALS AND METHODS

Systematic field trips for ethnobotanical exploration were undertaken during July 2010 to March 2011 in Kanjamalai Hills of Salem district of Tamilnadu. During the surveys personal interviewed were conducted with the village dwellers, village herbalists, herbal practitioners, elder people and their traditional healers[15]. Each of the plant material was assigned field book number and reported as to family, botanical name of species, local name (Tamil), part used, method of drug preparation, mode of application, dosage and duration were documented[16] 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[17-19]. The herbarium specimens were deposited in the department of Botany, Government Arts College (Autonomous), Salem for future reference.

RESULTS AND DISCUSSION

During the study, it was found that 44 plant species are used as herbal remedy for the treatment of several ailments. Of 39 genera and 24 families angiosperms, used by the local/rural peoples were documented. Plants of families Acanthaceae and Asclepiadaceae was largely represented (5 sp each) followed by Asteraceae, Euphorbiaceae and Liliaceae (3 sp each). The rest of the families recorded one or two species only. Among them, 27 plants were herbs, 4 tree species, 4 shrubs and 9 climber species. During present attention and interaction with the village herbalists, village dwellers, the herbal medicine practitioners, elder people and other traditional healers of Kanjamalai Hills of Salem district of Tamilnadu. 44 angiospermic plants were enumerated with their medicinal importance. Out of 44 plant species studies, 40 is dicot and 4 is monocot.

Eleven species are used for snake bite. Several plants are appreciably effective in curing asthma, dyspepsia, anthelmintic, gonorrhoea, wound healing, cough, cancer, fever, cold, rheumatism, dysentery, purgative, alterative, ulcers, laxative and scorpion bite. Species such as *Andrographis alata*, *Gymnema sylvestre* and *Cyanodon dactylon* are used to cure diabetes. Plants like *Abutilon indicum*, *Aristolochia indica*, *Argemone mexicana*, *Asparagus racemosus* and *Azadirachta indica* are used to manage leprosy. Jaundice is treated effectively with *Argemone mexicana*, *Eclipta prostrata*, *Phyllanthus amarus*, *Boerhavia diffusa* and *Cleome viscosa*. People also make use of *Aegle marmelos* and *Catharanthus roseus* to treat blood pressure. Ten species namely, *Andrographis paniculata*, *Aristolochia bracteolata*, *Aloe vera*, *Ageratum cuneifolium*, *Alangium salvifolium*, *Azadirachta indica*, *Gloriosa superba*, *Cassia auriculata*, *Hemidesmus indicus* and *Muraya paniculata* are used to treat several kinds of skin ailments. The local people apply *Aerva lanata* and *Tribulus terrestris* as anti-diuretic agents. Some medicinal plants namely, *Cassia occidentalis*, *Cissus quadrangularis*, *Alangium salvifolium*, *Solanum surratense* and *Vitex negundo* are used for various kind of diseases. Due to more need of ethnomedicinal plants and more earnings, local villagers have been motivated for conservation and cultivation of these plants.

Enumeration

The plant species are arranged in alphabetical order. The enumeration of plants contains scientific name, family name, vernacular name (Tamil). The medicinal uses are characterized with details such as the part(s) used singly, combination with other ingredients or mingled with other plants, method of preparation and mode of administration were carefully recorded in the field. The following is the list of 44 plants studied (Table 1). The villagers were mainly willing to share their information on herbal medication.

Table 1. List of Ethnobotanical notable plants of Kanjamalai Hills of Salem district of Tamil Nadu, Southern India

Scientific Name	Family	Vernacular Name	Ethnomedicinal Uses
<i>Abrus precatorius</i> Linn.	Fabaceae	Kuntumani	The whole plant powder mixed with cow's milk is given orally for antipyretic, asthma and cough.
<i>Abutilon indicum</i> (Linn.) Sweet	Malvaceae	Thutti	Leaf juice is given orally for ulcer, diarrhoea and rheumatism. The root powder mixed with hot water to drink which cure leprosy.
<i>Acalypha indica</i> Linn.	Euphorbiaceae	Kuppaimeni	Leaves paste mixed with coconut oil is applied externally in snake bite, scabies and bed-sores.

Scientific Name	Family	Vernacular Name	Ethnomedicinal Uses
<i>Achyranthes aspera</i> Linn.	Amaranthaceae	Nayuruvi	Leaf is given orally to treat piles. The root powder mixed with goat's milk and taken orally to treat antidote for snake bite.
<i>Aegle marmelos</i> (Linn.) Corr. Serr.	Rutaceae	Vilvam	Leaf juice is used to cure blood pressure. Decoction of the bark is used as fever. Decoction of the fruit is taken to dysentery and dyspepsia.
<i>Aerva lanata</i> (Linn.) Juss.	Amaranthaceae	Sirukanpulai	Root powder is taken with hot water orally twice a day in headache. Fresh leaf juice is given orally thrice a day for one week to treat diuretic and anthelmintic.
<i>Ageratum conyzoides</i> Linn	Asteraceae	Sethupunthalai	Leaf paste mixed with common salt is applied on affected part in skin diseases, sores and itches.
<i>Alangium salvifolium</i> Linn	Alangiaceae	Alangimaram	Fruit juice is given to eye diseases. The leaf paste is applied on skin diseases.
<i>Aloe vera</i> (L.) Burm. F.,	Liliaceae	Sothukattalai.	Plant is used for skin diseases and promote coolness. The smooth gel is applied externally in pimples.
<i>Andrographis alata</i> Nees.	Acanthaceae	Periyanangai	The leaf of juice mixed with water to drink which cure snake bite. Fresh leaf juice is give orally twice a day for Four to Six days in fever, diabetes and diarrhoea.
<i>Andrographis echiioides</i> Nees.	Acanthaceae	Gopuramthangi	Leaves decoction taken orally with hot water in fever and stomachache problems. The leaf paste is applied on cuts and wounds.
<i>Andrographis paniculata</i> Nees.	Acanthaceae	Nilavembu, Siriyanangai	Leaf decoction is taken with hot water orally a day in snake bite, insecticide and scorpion sting. The leaf paste is applied externally to cure skin diseases and snake bite.
<i>Andrographis serpyllifolia</i> (Vahl) Wight.,	Acanthaceae	Kattuppooraan Kodi, Siyan kodi	Paste of leaves is applied on affected part in snake bite and scorpion bite. Decoction of the leaves is used to cure fever and cough.
<i>Argemone mexicana</i> Linn.	Papaveraceae	Perammathandu	Leaf juice 50 ml mixed with cow's milk used to malarial fever. Seed powder is taken with water orally twice a day in jaundice, leprosy and alterative. Latex is used to cure scorpion bite.
<i>Aristolochia bracteolata</i> Lam.	Aristolochiaceae	Aduthinnapalai	Leaf juice is mixed with honey which treat antipyretic. Paste of leaves is applied externally in snake bite and scorpion bite. Leaf paste is externally used for skin diseases.
<i>Aristolochia indica</i> Linn.,	Aristolochiaceae	Perumarindu	Leaf decoction taken orally with water used to leprosy. The leaf powder mixed with black pepper and drink to cure snake bite. Root powder is taken with hot water orally twice a day in scorpion sting.

Scientific Name	Family	Vernacular Name	Ethnomedicinal Uses
<i>Asparagus racemosus</i> Willd.	Liliaceae	Thannervitankilangu	Root decoction is mixed with cow's milk are given in dysentery and rheumatism. Roots with honey and cow's milk used to epilepsy, leprosy and body pain.
<i>Azadirachta indica</i> A. Juss.	Meliaceae	Vembu	Decoction of the bark is taken as liver tonic. Leaf paste is applied on affected part in skin disorders. Seed oil is used for leprosy and wound healing.
<i>Boerhavia diffusa</i> Linn.	Nyctaginaceae	Mukkurattai	The root powder mixed with hot water is used in jaundice. Leaf decoction mixed with black pepper is used against laxative, abdomen pain and spleen enlargement.
<i>Calotropis procera</i> R.Br.	Asclepiadaceae	Erukku	Latex is applied externally for dog bite and scorpion bite. The flowers powder mixed with black pepper and pinch of common salt is given orally in snake bite.
<i>Cassia auriculata</i> Linn.	Caesalpiniaceae	Aavarai	Root paste mixed with coconut oil is applied on skin diseases. Fresh leaves are pounded in water and filtered. The decoction is given internally twice a day for one week to cure anthelmintic.
<i>Cassia occidentalis</i> Linn.	Caesalpiniaceae	Peeperambi, Thagarai	Root juice is given orally twice a day for 5 days in ringworm.
<i>Catharanthus roseus</i> G. Don.	Apocynaceae	Nithyakalyani	Root powder mixed with hot water to drink which cure high blood pressure and cancer.
<i>Cissus quadrangularis</i> Linn.	Vitaceae	Pirandai	Paste of the whole plant grounded with egg and water is bandaged on the bone fractured body parts. Stem pounded in water is given orally twice a day for 5 days in scurvy, epilepsy, asthma and menstrual disorders.
<i>Cleome viscosa</i> Linn.	Capparidaceae	Naaivelai	Leaf juice mixed with sugar is given internally in vermifuge and jaundice.
<i>Cyanodon dactylon</i> Pers.	Poaceae	Arugampullu	Decoction of the whole plant is given as diabetes, promote coolness, stomachache problems and urinary problems.
<i>Datura metal</i> Linn.	Solanaceae	Oomathai	The leaf juice mixed with black pepper and drink to cure cough, asthma and chronic ulcers.
<i>Eclipta prostrata</i> Linn.	Asteraceae	Karisalai	Decoction of leaves mixed with goat's milk used in jaundice, dyspepsia and fever. The root juice mixed with black pepper and drink to treat emetic purgative and ulcers.
<i>Euphorbia hirta</i> Linn.	Euphorbiaceae	Amampatchaiarisi	Crushed leaves mixed with common salt and cow's milk is used in dysentery and diarrhoea. Latex is applied externally for pimples.

Scientific Name	Family	Vernacular Name	Ethnomedicinal Uses
<i>Gloriosa superba</i> Linn.	Liliaceae	Kalappaikilangu	The juice of the tuber mixed with cow's milk is taken internally to cure aphrodisiac. Tubers are ground and 50 ml of the tuber decoction is mixed with cow's milk and taken orally twice a day for 5 days in skin disorders and gonorrhoea.
<i>Gymnema sylvestre</i> R.Br.	Asclepiadaceae	Shiru-kurunjan	Fresh leaf juice is taken with water orally thrice a day for one week to treat diabetes.
<i>Hemidesmus indicus</i> R.Br.	Asclepiadaceae	Nannari	Root juice is given to fever. Leaf paste is used to cure skin diseases and venereal diseases. Roots are used as spice agent in syrup preparation.
<i>Leucas aspera</i> . Spreng.	Lamiaceae	Tumbai	The paste of the leaf is applied on forehead for the relief of headache. The leaf decoction mixed with hot water which is taken to treat cooling medication for scabies. The root decoction mixed with cow's milk thrice a day for five days to treat snake bite, also used as an antidote to poison.
<i>Muraya paniculata</i> (Linn) Jack	Rutaceae	Angarapputhalai	The leaf powder mixed with hot water to drink which cure snake bite, insect bite, scorpion sting, skin diseases, also used as an antidote to poison. Decoction of the leaf juice 50 ml mixed with cow's milk and drink to treat stomachache problems.
<i>Ocimum sanctum</i> Linn.	Lamiaceae	Tulasi	Fresh leaf extract is used in fever cough and cold.
<i>Pedaliium murex</i> . Linn.	Pedaliaceae	Yaanainerunji	The leaf juice is mixed with common salt and black pepper three times a day for two days to treat fever.
<i>Pergularia daemia</i> (Forssk) Chior.	Asclepiadaceae	Veliparuthi	Plant paste is applied on headache. The decoction of the leaves is taken to treat asthma.
<i>Phyllanthus amarus</i> Linn.	Euphorbiaceae	Keelanelli	Decoction of the whole plant mixed with hot water is given two times a day for one week for jaundice and liver complaints.
<i>Rhinacanthus nasutus</i> Kurz.	Acanthaceae	Nagamalli	Leaf paste of the plant is used in treatment of snake bite and scorpion sting.
<i>Solanum surratense</i> Burm.	Solanaceae	Kandankathiri	Fruit paste is given orally twice a day for one week to treat toothache. The leaves are burnt and the ash is mixed with cow's milk and drink to cure paralysis and dyspepsia.
<i>Tribulus terrestris</i> Linn.	Zygophyllaceae	Nerunchi	Decoction of the whole plant is taken internally to treat urinary disorders. Leaf paste mixed with coconut oil is applied on wounds.
<i>Tridax procumbens</i> Linn.	Asteraceae	Vettukayapoondur	Leaf paste is used to treat cuts and wound healing.

Scientific Name	Family	Vernacular Name	Ethnomedicinal Uses
<i>Tylophora indica</i> (Burm. f.) Merr.	Asclepiadaceae	Asthmakodi	Leaf juice mixed with cow's milk is given two times a day for five days in asthma and insect bite. Fresh leaf juice is given internally twice a day for five days in stomachache problems.
<i>Vitex negundo</i> Linn.	Verbinaceae	Notchi	Leaf juice mixed with hot water is taken orally in vermifuge. Decoction of the flowers is given for liver complaints.

CONCLUSION

The findings of the investigation envisage that the herbal medication have excellent potentiality to treat various ailments. Villagers chiefly demand on the herbs for all disorders. They are perceptive of the plant medicines for familiar diseases such as asthma, diabetes, jaundice, leprosy, antipyretic, skin diseases, dysentery, diarrhoea and cough. They are also very popular with the antidotes for snake bite and scorpion bite. Clinical and pharmacological traits will support in the approved of the efficacy of the declare plants. Their mode of preparation and mode of administration are also easy and suitable and the treatments are without any side effects. For the help of the local people the recorded plant species should be taken care of and also steps be taken for conservation of important plant species of the area and also to protect genetic diversity.

REFERENCES

- [1] P. Pushpangadan, Ethnobotany in India – A Status Report All India Co-ordinated Research Project, Ministry of Environment and Forests, Government of India, New Delhi, **1995**.
- [2] P. Dwarakan; C. Alagesaboopathi, *J.Econ.Tax.Bot.* **1999**. 23, 421-424.
- [3] C. Alagesaboopathi, *Afr.J.Traditional Complementary and Alternative Medicines*. **2009**.6, 222-227.
- [4] KR. Kirtikar; BD. Basu, Indian Medicinal Plants. Vol. I-IV. International Book Distributors Booksellers and Publishers, Dehra Dun. **1999**.
- [5] KM Nadkarni, Indian plants and drugs with their medicinal properties and uses. Asiatic Publishing Houses, New Delhi, **2001**.
- [6] K. Rajendran; P. Balaji; Jothi Basu, *Indian J.Traditional Knowledge*, **2008**. 7(3) 417-420.
- [7] V. Balakrishnan; P. Prema, KC. Ravindran; J. Philip Robinson, *Global Journal of Pharmacology*, **2008**. 3(1), 8-14.
- [8] D. Natarajan, B. Balaguru, N.Nagamurugan, S. Soosairaj; E. Natarajan, *Indian J.Traditional Knowledge*, **2010**. 9(4), 768-774.
- [9] A. Abu-Rabia, *J.Ethnobiol.Ethnomedicine*, **2005**. 1, 4.
- [10] SJ. Pei, *Pharma Biol*, **2001**. 39, 74-79.
- [11] D. Mishra, Rajesh, M. Chakravarty; MP. Goutam, *Indian For.* **2006**. 132, 850-855.
- [12] PS. Udayan, Sateesh George, KV Thushkar; *Indian J.Traditional Knowledge*, **2005**. 4(4), 437-442.
- [13] GN Tribedi, V. Mudgal; DC. Pal, *Bull Bot. Surv.India*, **1993**. 35(1-4), 6-10.
- [14] K. Rajendran, R. Balakrishnan; S. Chandrasekaran, *J.Econ.Tax.Bot.*, **2003**. 37(3), 727-731.
- [15] RK. Sinha, Ethnobotany – The Renaissance of Traditional herbal medicine, Ina Publishers, Jaipur, **1996**.
- [16] M. Parinitha, BH. Srinivasa; MB. Shivanna, *J.Ethnopharmacol*, **2005**. 98,307-312.

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- [17] JS. Gamble, *Flora of the Presidency of Madras*, Vol. I-III, Allard and Co., London, (Reprinted 1956), Botanical Survey of India, Calcutta. **1936**.
- [18] AN. Henry, GR. Kumari; V. Chitra, *Flora of Tamil Nadu, India*, Series 1: Analysis, Botanical Survey of India, Southern Circle, Coimbatore. **1987**.
- [19] KM. Matthew, *An excursion flora of Central Tamil Nadu, India*, (Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi), **1991**.