www.advancejournals.org
Open Access Scientific Publisher

Research Article

ETHNOBOTANICAL SURVEY OF GUDIYUM FORESTS, THIRUVALLURE DISTRICT, TAMILNADU, INDIA

Tamilvannan M. V.[1], Kadirvelmurugan V.[1], Ravikumar S.[1]
[1]Department of Plant Biology and Plant Biotechnology, Presidency College, (Autonomous) Chennai-600005, India

Correspondence should be addressed to **Tamilvannan M. V.**

Received April 04, 2016; Accepted April 20, 2016; Published May 04, 2016;

Cite This Article: M. V., Tamilvannan., V., Kadirvelmurugan., S., Ravikumar.(2016). Ethnobotanical survey of Gudiyum forests, Thiruvallure District, Tamilnadu, India. International Journal of Ethnobiology & Ethnomedicine, 2(1).1-9

ABSTRACT

An ethnobotanical survey was carried out among the ethnic groups of Gudiyum forests situated in the west part of Jaganathapuram village-Nagari District (AP), East part of Uttukottai- Tiruvallur District (TN), North part of Nagalapuram Village – Nagari District (AP) and South part of Poondi Village – Thiruvallure District(TN). It is located in lat: 13.28790 and Log: 79.80867 with area coverage of 148 Acres of Tiruvallur District in Tamil Nadu. Aged local tribal were questioned and based on their input a total of 60 plant species belonging to 38 families are considered to be of ethnobotanical interest. All the plants were evaluated through phytochemical investigations and their potentiality for drugs is assessed. The present study shows how traditional medicine can be used for revival of our own siddha medicines.

KEY WORDS: Ethnobotanical; Gudiyum Forest; Tribal.

INTRODUCTION

Ethnobotany plays a crucial role in the study of traditional medicine, as it has an interfacial function linking nature with culture and traditional knowledge with modern technology, thus contributing to all, understanding of traditional medicine knowledge. Ethnobotany has been evolved as a promising discipline, that highlight the people-plants relationship in a multidisciplinary way such as ecology, economic botany, pharmacology, public-health and other disciplines as needed (Balick, 1996). It has safe, effective and inexpensive indigenous remedies which are gaining popularity among the people of both urban and rural areas, especially in India and China (Katewa 2009). Schultes (1962) revealed that Ethnobotany is the study of the relationship which exists between people of primitive societies and their plant environment. The term is not new to India hence Kirtikar and Basu stated in 1935, the ancient Hindus should be given the credit for cultivating what is now called ethnobotany. Though, ethnobotany provides several approaches in researches here, the plant resources which help in medicinal aspects are only mentioned. Forests provide rich reserve of compounds that can be utilized in pharmaceutical and nutraceuticals. Plant extracts contain a variety of bioactive compounds such as polypeptide and phytoestrogens which

possess biological activities such as anti-cancer activity and antioxidant potentials. Moreover, several problem related diseases with vitality, diabetes, memory loss, could be cured effectively by using herbal medicines, which are hardly by the Allopathic medicines. Upadhyay *et al* (2008); Saini *et al* (2010); Sharma and Kumar (2011) have conducted studies on Ayurvedic crude drugs against various digestive diseases, leprosy, skin diseases, malaria and paralysis too. Indian subcontinent in being inhabited by over 53.8 million tribal people in 5000 forests which comprise 15% of the geographical area of Indian landmasses (Albert et al., 2006). The tribes mostly depend on the plants around them for all their day-today activities which made them acquire knowledge of economic and medicinal properties of many plants by trial and error methods. Use of plants for curing diseases has been common in most parts of the world long since and about 75,000 plants are being used in different systems of medicine of which more than 20,000 of higher plants are used in the traditional treatment practices of indigenous culture living around the world (Ved Prakask, 1998).

The Gudiyum cave was discovered by the geologist Sir Robert Bruce Foote exists near Poondi in Tiruvallur taluk of Tiruvallur District. The present study was aimed to identify plants used for medicinal purposes by the traditional healers, located in Poondi Village – Thiruvallure District (TN), India and to document the traditional names, preparation of medicines and other uses of these plants.

STUDY AREA

Gudiyum forest are present in west part of Jaganathapuram village-Nagari District (AP), East part of Uttukottai- Tiruvallur District (TN), North part of Nagalapuram Village – Nagari District (AP) and South part of Poondi Village – Thiruvallure District (TN). It is located in lat: 13.28790 and Log: 79.80867 with an area covered with 148 Acre of Tiruvallur District in Tamil Nadu. Climate of the District is on the whole dry, except during North-East monsoon season. Average Annual rainfall in the Gudiyum forests is 1104 mm and in summer, maximum temperature is 21.5^{o} C to 37.5 ^{o}C.

The informants are traditional healers, healing their families and are knowledged on the medicinal uses of various plants. The wealth of medicinal knowledge among the people of this District is based on hundreds of years of their beliefs, applications and observations. But, their progeny are not interested to join in this traditions and the knowledge is increasingly diminishing.

COLLECTION AND IDENTIFICATION OF THE MEDICINAL PLANTS

The exploration of the Gudiyum forests has been carried out during March 2013 to September 2014 and all the information were gathered from local traditional healers of forest and resource persons with the knowledge of medicinal plants. The methodology used for collecting the ethnobotanical information has been put into the following categories (Trivedi, 2011):-

Direct Approach

This included the intensive field surveys among tribal and remote areas Goonipalayam village (TN) and Sankarapuram village (AP).

Indirect Approach

It included collection of information from literature and Herbarium.

Miscellaneous

Some information was also collected after discussion with the non–tribal, such as Village Headman, Spiritual leaders, Ayurvedic doctors, etc.

The detailed information regarding herbal names, parts used, purpose, mode of administration and medicinal uses have been recorded. The information thus collected has been cross checked with the information from neighboring herbalists and with the available literature (Reddy, 2011). All the species are identified taxonomically using the flora of Presidency College of Madras (Gambel, 1935) and with the use of the Herbarium of the Presidency College,Chennai.

Fig : 1

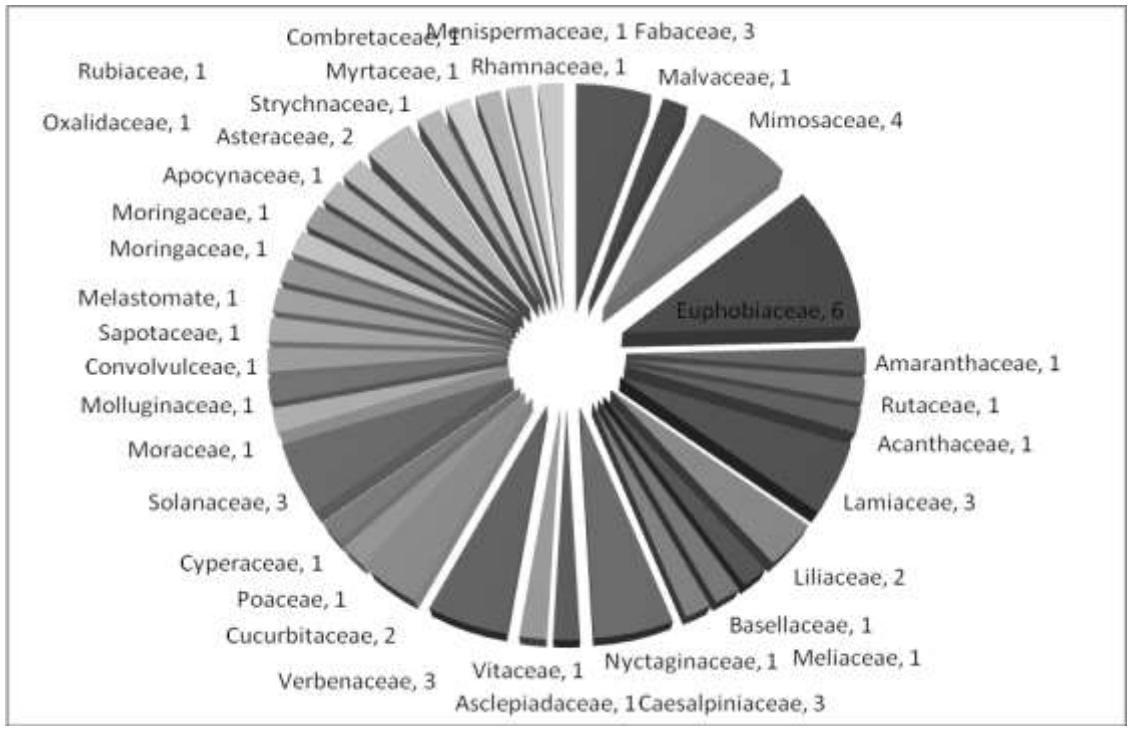

TABLE: 1

S.NO	BOTANICAL NAME	FAMILY NAME	LOCAL NAME	METHOD OF PREPARATION AND MEDICINAL USES
1	Abrus precatorius L	Fabaceae	Guriginja	Root extract is used for the treatment of conjunctive and irritation of eye. Decoction of leaves reduce body heat
2	Abutilon indicum L.	Malvaceae	Thuthi	Leaf and root extracts are taken orally to treat dental problems.

3	Acacia arabica Wild	Mimosaceae	Kaurvelam	Roots are used to cure Tooth problems and to strengthen the tooth gums.
4	Acacia leucophloca (Roxb.) Willd.	Mimosaceae	Velvelamaram	Paste of fresh stem bark is applied topically to treat cuts and wounds.
5	Acalypha indica L.	Euphorbiaceae	Kuppaimeni	Leaf paste is applied topically to treat skin diseases.
6	Achyranthes aspera L.	Amaranthaceae	Naayuruvi	Leaf paste is applied topically to treat cuts and Wounds.
7	Aegle marmelos Corr.ex.Roxb.	Rutaceae	Vilvam	Leaf paste is applied topically to heal wounds.
8	Albizia amara (Roxb) B. Boivin	Mimosaceae	Thuringil	Leaf and flowers are anti-inflammatory, used against boils and ulcers.
9	Andrographis paniculata	Acanthaceae	Seraniagai	Crushed Leaves paste is taken twice daily as an anti-dote against snake bite.
10	Anisomeles malabarica L	Lamiaceae	Mogabeera	Decoction of Leaves is administered to control cold and fever.
11	Asparagus racemosus Wild	Liliaceae	Pilliteegalu	Tuberous root extract is given to get relief from stomach ache.
12	Azadirachta indica A. Juss.	Meliaceae	Vembu	Leaf paste is applied topically on the body to treat small pox, rheumatism and skin diseases. The young twigs are used as toothbrush.
13	Basella alba L	Basellaceae	Bachali	Decoction of leaves is administered to cure all types of pains.
14	Boerhaavia diffusa L	Nyctaginaceae	Mookaratai	Root paste is applied topically to treat hydro-testes.

15	Caesalpinia bonduc L	Caesalpiniaceae	Gacha	Extract of stem relieves swelling of tentacles.
16	Calotropis gigantea R.Br	Asclepiadaceae	Eruk Poo	Leaf-paste is applied directly on the affected area to treat Dog bite.
17	Cassia alata Linn	Caesalpiniaceae	Peda tangedu	Leaf paste is applied externally for skin diseases.
18	Cassa aruiculata L	Caesalpiniaceae	Avaram Poo	Fruit paste is applied on head ache; Dried flower powder is mixed with milk and given to control alcoholism.
19	Cissus quadrangularis L.	Vitaceae	Pirandai	Stem paste is taken orally or cooked and eaten to cure digestive problems.
20	Clerodendrum inerme L	Verbenaceae	Nalla vuppi	Leaf paste is applied on scabies.
21	Clitoria ternatea L.	Fabaceae	Sangu Pushpam	Root extract is taken orally to treat indigestion, eye diseases and headache.
22	Coccinia grandis (L.) J. Voigt.	Cucurbitaceae	Kovai	Leaf extract with butter is applied topically to treat skin diseases.
23	Coldenia procumbens L	Boraginaceae	Cheruppadai	Leaf extract prevents white discharges in women.
24	Croton bonplandianum	Euphorbiaceae	Nervaalam	Plant extracts controls dropsy and enlargement of abdominal viscera.
25	Cynodon dactylon L. Pers	Poaceae	Arugampullu	Decoction of whole plant is taken orally as a coolant.
26	Cyperus rotundus L.	Cyperaceae	Korai	Dried tuber paste is applied to increase lactation and against scorpion stings.

27.	Datura metal L	Solanaceae	Oomathai	A few drop of leaf juice is dropped into ear in earache.
28	Dichrostachys cinerea (L.)	Mimosaceae	Vidathalai	Root extract is an astringent, diuretic and used in urinary infections.
29	Enicostema axillare Lam	Gentianaceae		Leaf juice is taken orally to prevent white discharges in women.
30	Euphorbia antiquoram L	Euphorbiaceae	Sathurakkalli	Low dosage of dried latex is taken internally in constipation.
31	Euphorbia hirta L.	Euphorbiaceae	Amman pacharisi	The milky latex is applied topically to treat wounds and lip cracks.
32	Ficus benghalensis L.	Moraceae	Alamaram	Stem latex is applied topically to heel cracks. Twigs are used as tooth brush.
33	Glinus lotoides L	Molluginaceae	Siru seruppadai	The Plant decoction is given in piles, dysentery and urinary infections.
34	Heliotropium indicum L		Thelkodukku	Paste of whole plant is applied topically to treat wounds and skin infections.
35	Ipomoea lacunosa L	Convolvulaceae	Thali Keeri	Leaf paste is applied in bandaging Bone fractures.
36	Jatropha gossypiifolia L	Euphorbiaceae	Adavi kanuga	Leaf extract is used to cure wounds.
37	Lantana camara L.	Verbenaceae	Unni chedi	Flower paste with coconut oil is applied topically in headache.
38	Leucas aspera (Willd.) Link.	Lamiaceae	Thumbai	Leaves are boiled and the vapour is inhaled to cure head ache and fever.

39	Madhuca indica J. F. Gmel	Sapotaceae	Iceluppai	Bark powder, seed oil and gum are used to treat, gum troubles, diabetes, ulcer and rheumatic pains.
40	Memecylon edule Roxb	Melastomataceae	Kayam	Leaves have anti-inflammatory and analgesic properties, traditionally used to heal burns and wounds without scarring.
41	Moringa oleifera Lam.	Moringaceae	Murangai	The leaves, flowers and fruits are cooked and eaten as coolant, to cure indigestion and to increase fertility.
42	Mukia maderaspatana (L.) M. Roemer	Cucurbitaceae	Musumusukai	Leaf powder is mixed with boiled rice and taken orally to treat cold and cough.
43	Ocimum sanctum L.	Lamiaceae	Thulasi, Tulsi	Leaves are crushed with onion bulbs and the juice is taken orally to treat cough, cold and headache.
44	Oxalis corniculata Linn	Oxalidaceae	Pulichinta	Plant juice is gently applied on skin allergies.
45	Plumeria rubra L	Apocynaceae	Devegannеru	Leaf extract controls asthma.
46	Ricinus communis L.	Euphorbiaceae	Amanakku	The leaf infusion is taken orally or applied to increase lactation in women. The seed-oil is applied on lower stomach to get relief from stomach-ache.
47	Rubia cordifolia Linn	Rubiaceae	Manjistamu	Root paste is applied externally and its decoction is given orally against eczema.
48	Sansevieria roxburghiana	Liliaceae	Motta Manji	Tender shoots juice is given to children to clean phlegm from throat in cold.
49	Senna ariculata (L.) Roxb	Fabaceae		The root decoction is used against fever, diabetes and constipation.

50	Solanum nigrum L.	Solanaceae	Manathakkali	Leaves are taken as food to treat mouth and stomach ulcer and cough.
51	Solanum trilobatum L.	Solanaceae	Thuthuvalai	Unripe fruits are roasted in gingili oil and taken orally to strengthen the body. The leaves are cooked and eaten to cure asthma.
52	Sphaeranthus indicus L.	Asteraceae	Kottaikkarantai	Leaves, flowers and seeds paste is applied to treat skin diseases and piles.
53	Strychnos nux-vomica Linn	Strychnaceae	Mushti	Leaf paste is applied externally against skin diseases.
54	Syzygium cumini (L.) Skeels	Myrtaceae	Naval maram	Paste of stem bark is applied topically to treat swellings. Seeds powder is anidiabetic.
55	Terminalia bellirica	Combretaceae	Thandra	Extraction of bark relieves sprains. Seeds extract cures asthma.
57	Tinospora cordifolia	Menispermaceae	Kodaparuavalli	Plant extract is used to treat fever, inflammations, rheumatic pains, low blood pressure and jaundice.
58	Tirdax procumbens Linn	Asteraceae	Gaddi chamanti	Leaf extract is applied over cuts and wounds.
59	Vitex negundo L	Verberanceae	Nochi	Leaves are tied on forehead in head ache.
60	Ziziphus jujuba	Rhamnaceae	Jujube	Leave paste applied to cure boils and carbuncles.

RESULTS AND DISCUSSION

Leaves are the most frequently used plant part and most of the medicines are prepared in the form of paste and administrated orally. The external applications for skin diseases, snake bites and wounds and internal consumption of the preparations were involved in the treatment of various diseases (Karthik, 2011). The plant parts used widely to treat human and livestock health problems included root, stem, leaves and latex. This exploration is reported with 60 medicinally important species belonging to 35 families. Similarly the present study concluded that, the wealth of traditional ethnomedicinal knowledge of plants may also promise for novel researches and to discover new drugs to treat various diseases and their other applications. The tribes cure diseases using this plants such as tooth problems, skin diseases, inflammations, snake bites, cold, fever, pains, rheumatism, diarrhea, eye infections, and various allergies as showed in Table: 1. The most common represented families are Euphorbiaceae, Lamiaceae, Mimosaceae, etc. as shown in the following fig; 1

CONCLUSIONS

The compulsive use of traditional use of herbs in Seshachala Jaganathapuram village-Nagari District (AP), East part of Uttukottai- Tiruvallur District (TN), North part of Nagalapuram Village – Nagari District (AP) and South part of Poondi Village – Thiruvallure District (TN) reflects the revival of interest in traditional medicine. They are perceptive of the plant medicines for familiar diseases such as asthma, diabetes, jaundice, leprosy, fever, skin diseases, dysentery, diarrhea and cough. They are also very popular with the antidotes for snake bites and scorpion stings. Clinical and pharmacological traits will support in the approval of the efficacy of the declared plants. However, the pharmacodynamic and pharmacokinetic elucidations of novel drugs discovered from these plant species are the first steps in discovering novel drugs from these plant species. The information on therapeutic uses of these plants may provide a great prospect for discovering of new drugs. With the help of the local people the recorded plant species are taken-care-off for conservation to protect the genetic diversity. So, further scientific assessment of these medicinal compounds for their phytochemical, biological and clinical studies is however greatly needed. The present research indicates that a research project should be designed in priority on this area for the pharmacological evaluation and conservation of these medicinal plants of this area.

REFERENCE

[1] Albert L ,sajem and kuldip gosai, 2006: Journal of Ethnobiology and Ethnomedicine 2(33):1-7

[2] Balick, M.J. 1996. Transforming ethnobotany for the new millenium. Ann. MO Bot. Gard. 83, 58-66

[3] Gamble.J.S. The Flora of the Presidency of Madras., 1935, (Adlard & son, Ltd, London).

[4] Karthik. 2011. In vitro propagation of a rare succulent medicinal plant Caralluma diffusa (Wight) N.E.Br. Res Plant Biol 2003; 3: 8–17.

[5] Karthik.V, K Raju; M Ayyanar; K Gowrishankar and T Sekar, (2011). J. Nat. Prod. Plant Resour., 1 (2): 50-55

[6] Katewa 2009. Ethnomedicinal and obnoxious grasses of Rajasthan India. Journal of Ethnopharmacology 76, 293– 297.

[7] Kirtikar KR, Basu BD (1935). Some traditional etnomedicinal plants of southern Rajasthan. Indian J. Trad. Knowl., 9(3): 471-474.

[8] Reddy.A, Rajagopal Reddy.S, Philomina.N.S, and Yasodamma.N, (2011). Ethanobotanical survey of Sheshachala Hill Range of Kadapa District, A.P, India. Indian Journal of Fundamental and Applied life Science. 1(4): 324-329.

[9] Saini M.L, SainiR, RoyS and Kumar,A (2008) Comparative pharmacognostical andantimicrobial studies of Acacia species (Mimosaceae). Journal of Medicinal PlantsResearchVol.2:378–386.

[10] Schultes RE (1962). The role of ethnobotanist in search for new medicinal plants, Lloydia, 25(4): 257-266.

[11] Sharma S and Kumar A (2011). Studies on growth and physiology of some medicinal plants: improving growth and productivity of medicinal plants. Lap Lambert Academic Publishing , Germany pp 357.

[12] Trivedi.P.C and Pareek.A, 2011. Ethanobotanical studies on Medicinal plants of Kaladera Region of Jaipur District. Indian journal of Fundamental and Applied life sciences, 1(1): 59-63.

[13] Upadhyay, B., Singh, K.P. and KumarA.(2008):Ethno-medicinal, phytochemical and antimicrobial Studies of Euphorbia tirucalliL. .Journal of Phytology 2, 65–77.

[14] Ved Prakash. 1998. Indian medicinal plants-current status-I: Enthnobotany. 10:112-121.