DOI:10.26524/krj253

*Kong. Res. J.* 5(1): 51-55, 2018
**Publisher**: Kongunadu Arts and Science College, Coimbatore.

http://krjscience.com

**RESEARCH ARTICLE**

# ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS IN AND AROUND MARANDAHALLI VILLAGE, DHARMAPURI DISTRICT, TAMIL NADU

**Vijayakumar, K.K.* and M. Parimala**
Department of Botany, Kandaswami Kandar's College, Namakkal - 638 182, Tamil Nadu, India.

**ABSTRACT**

The present ethnobotanical investigation was carried out from December, 2016 to February, 2017 to identify the medicinal plants used by local people residing in and around Marandahalli village, Dharmapuri District regularly. A total of 58 medicinal plants were identified on basis of available first hand information from local people inhabiting in the study area, from literature survey and internet. Out of 58 medicinal plants documented in the study area, only 27 plants have been used by them for the treatment of various diseases like fever, intermittent fever, cough, asthma, jaundice, gastric problems, urinary disorders, dry skin disease, psoriasis, skin allergies, leucoderma, burning skin, liver disorders, snake bite, memory power, ulcer, diabetes, stomach aches etc., The plants were also to be used in different forms such as juice, decoction, powder and past. Authentication is needed to validate the usage.

**Keywords:** Ethnobotany, Herbal medicine, Local people, Marandahalli, Dharmapuri.

## 1. INTRODUCTION

In India medicinal plants based traditional systems of medicines are playing major role in providing health care to large section of population in both rural and urban areas. Indian Systems of Medicine are well known among the global traditional systems of medicine which has been included Ayurveda, Unani, Siddha, Indigenous systems of medicine and Traditional systems of medicine. Traditional Systems of medicines always played important role in human welfare. These systems are continuing at present and also play major role in future. The system of medicines which are considered to be Indian in origin or the systems of medicine which have come to India from outside and got assimilated in to Indian culture are known as Indian Systems of Medicine (1).

Now India has only six recognized systems of medicine namely Ayurveda, Siddha, Unani and Yoga, Naturopathy and Homoeopathy. Even though Homoeopathy came to India in 18th Century, it is completely assimilated into the Indian culture and got enriched like any other traditional system hence it is considered as part of Indian Systems of Medicine (1). This system consists of both internal and external medicines which are today available in market, manufactured by various companies. However there are traditional practioners still practicing with their self prepared drugs.

The ancient Indian system of medicine reports diverse medicinal plants ranging from higher plants to lower forms from which more than 70% of medicinal drugs are derived which have been used to treat various diseases for 6000–7000 years (2). The indigenous knowledge of medicinal plants has been documented in different Indian system of medicines such as Ayurveda, Unani and Siddha (3)

Ethnobotanical investigations are a suitable source of information about medicinal plants for the treatment of various diseases. These studies give idea to enhance our traditional knowledge, skills and technology about cultivation and uses of medicinal plants for the welfare of local or tribal communities. The use of ethnobotanical information on medicinal plants has given considerable attention to research community (4). In Eastern Ghats and also Dharmapuri District, many ethnobotanical studies were conducted among the tribal communities and documented their indigenous knowledge on medicinal plants also. But the reports on indigenous knowledge of local people on medicinal plants are considerable less in number. Hence the present ethnobotanical study was aimed to conduct among the local communities in and around Marandahalli village, Dharmapuri District to document their indigenous ethnobotanical knowledge on the utilization of commonly available medicinal plants.

## 2. MATERIALS AND METHODS

### *2.1. Study area*

The present ethnobotanical study was conducted in and around Marandahalli village, Dharmapuri District, Tamil Nadu (Fig. 1). The study area lies between 12.4°N and 78°E. It has an average elevation of 581meters above msl. Marandahalli is approximately 40 km away from Dharmapuri and 80 km away from Bengaluru.

*Correspondence: Dr. K.K. Vijayakumar, Assistant Professor, Department of Botany, Kandaswami Kandar's College, Namakkal - 638 182, Tamil Nadu, India. E-mail: kkvijay4@gmail.com m

Fig.1. Location map of the study village, Marandahalli.


*2.2. Data collection and identification of medicinal plants*

Periodic field survey for ethnobotanical exploration was conducted during December, 2016 to February, 2017 in Marandahalli village, Dharmapuri District. The local people and other traditional healers in and around the study area has been enquired and interviewed to collect the first hand information about vernacular name, medicinal uses, parts used and mode of administration of medicinal plants.

The data collection has been confirmed by contacting many people. The local people accompanied us to find out the right plant material from the study area and other nature habitat, the plants photographed in the field itself. The twigs of the medicinal plants are collected from study area and identification was done with the help of local and regional floras such as hand book of flora of presidency of Madras (5), the flora of the Tamilnadu Carnatic (6) and other flora of different areas (7,8). This identification was later confirmed by matching the plants with authentic specimen at Botanical Survey of India, Southern Circle, Coimbatore.

## 3. RESULTS AND DISCUSSION

The present study revealed that a total number of 58 medicinal plants were documented in and around the study area. The details of medicinal uses, parts used and mode of administration of medicinal plants are presented in Table 1. In this study, 58 plants species belonging to 54 genera under 33 families have been reported. Most dominant families in the study area were Solanaceae (6 species) followed by Euphorbiaceae, Asteraceae, Fabaceae, Malvaceae and Cucurbitaceae (4 species each), Lamiaceae (3 species), Amaranthaceae, Asclepiadaceae, Rutaceae, and Apocynaceae (2 species each) and other families with 1 species are Annonaceae, Clusiaceae, Convolvulaceae, Combretaceae, Moringaceae, Passifloraceae, Salvatoraceae, Nyctaginaceae, Caricaceae, Moraceae, Arecaceae, Piperaceae, Mimosaceae, Plumbaginaceae, Liliaceae, Lythraceae, Myrtaceae, Punicaceae, Verbenaceae, Menispermaceae and Rhamanaceae.

**Table 1. List of medicinal plants present in the study area with their medicinal uses.**

| S. No. | Species | Family | Parts used | Medicinal uses | Mode of administration |
|---|---|---|---|---|---|
| 1 | **Acalypha indica* (Linn.) | Euphorbiaceae | Whole plant | Skin Disease, Ulcer, Bronchitis | Juice |
| 2 | **Aloe vera* (Linn.) Burm.f. | Liliaceae | Leaf | Sunburns, purgative, carminative | Juice |
| 3 | **Alternanthera sessilis* Linn. | Amaranthaceae | Whole plant | Leprosy, dyspepsia, Skin disease | Powder |
| 4 | *Amaranthus viridis* Linn. | Amaranthaceae | Whole plant | Diuretic, purgative | Powder |
| 5 | **Annona squamosa* Linn. | Annonaceae | Fruit | Constipation | Raw |
| 6 | *Asclepias curassavica* L. | Asclepiadaceae | Whole plant | Anodyne, antitumor | Juice |
| 7 | *Azima tetracantha* Lam. | Salvadoraceae | Leaf | Asthma, rheumatism | Juice |
| 8 | **Bidens pilosa* L. | Asteraceae | Leaf | Antitumor, antibacterial | Decoction |
| 9 | *Boerhaavia diffusa* Linn. | Nyctaginaceae | Whole plant | Diabetes, jaundice | Decoction |
| 10 | *Cajanus cajan* (Linn.) millsp. | Fabaceae | Seed | Tumours, oral ulcers, fever | Powder |
| 11 | *Calophyllum inophyllum* Linn. | Clusiaceae | Seed | Dermatitis, burning, sensation | Decoction |
| *12* | **Calotorpis gigantea* R.Br. | Asclepiadaceae | Leaf | Cough, asthma | Powder |
| 13 | **Capsicum annuum* Linn. | Solanaceae | Fruit | Malarial, intermittent fevers, indolent ulcers | Powder |

| | | | | | |
|---|---|---|---|---|---|
| 14 | **Carica papaya* Linn. | Caricaceae | Fruit | Skin diseases, dyspepsia, urinary, leprosy | Juice |
| *15* | **Catharanthus roseus* (Linn.) G.Don | Apocynaceae | Whole plant | Leocoderma, cancer, chemotherapy | Powder |
| 16 | **Citrus limon* (Linn.) | Rutaceae | Fruit | Diarrhea, cold, antibacterial | Juice |
| 17 | **Clitoria ternatea* Linn. | Fabaceae | Leaf | Asthma, ulcers, pulmonary | Tonic |
| 18 | **Coccinea indica* (Wight & Arn.) Naud.) | Cucurbitaceae | Leaf | Cough, asthma, diabetes | Powder |
| *19* | *Cucurbita maxima* Duchesne ex Lam. | Cucurbitaceae | Fruit | Inflammations, nervous | Tonic |
| 20 | *Dolichos lablab* L. | Fabaceae | Flower | Stomach, disorders, heart problems | Decoction |
| 21 | *Eupatorium odoratum* L. | Asteraceae | Leaf | Skin wounds, fevers | Decoction |
| *22* | *Euphorbia heterophylla* L. | Euphorbiaceae | Whole plant | Asthma, bronchitis | Paste |
| 23 | **Ficus religiosa* Linn. | Moraceae | Fruit | Dysentery, diarrhea | Powder |
| 24 | *Hibiscus callyphyllus* av. | Malvaceae | Flower | Bowel diseases | Juice |
| *25* | *Hibiscus cannabinus* Roxb. | Malvaceae | Leaf | Dyspepsia, ophthalmopathy | Powder |
| *26* | **Hibiscus rosa-sinensis* Linn. | Malvaceae | Flower | Venereal diseases, skin diseases | Tonic |
| 27 | **Hyptis suaveolens* (L) Roit | Lamiaceae | Seed | Uterus, stomach aches | Powder |
| *28* | **Ipomea staphylina* Roemer and schultes | Convolvulaceae | Leaf | Snake bites, stones | Paste |
| 29 | **Lawsonia inermis* Linn. | Lythraceae | Flower | Skin diseases, ulcers, dysentery | Tonic |
| 30 | *Lycopersicon lycopersicum* (Linn.) karsten) | Solanaceae | Fruit | Liver, kidney, stimulant, asthma | Decoction |
| *31* | *Mukia madraspatanas* (Linn.) Roem. | Cucurbitaceae | Whole plant | Neuralgia, nostalgia colic | Tonic |
| 32 | **Mentha arvensis* Linn. | Lamiaceae | Leaf | Ulcer, colic, peptic ulcer | Juice |
| *33* | **Momordica charantia* Linn. | Cucurbitaceae | Leaf | HIV, cancer | Decoction |
| 34 | **Moringa olefera* Lam. | Moringaceae | Leaf | Antioxidants, lower cholesterol | Decoction |
| 35 | **Murraya koenigii* ( Linn.) Spreng. | Rutaceae | Leaf | Vomiting, leprosy, skin disease | Tonic |
| 36 | **Nerium oleander* Linn. | Apocynaceae | Leaf | Asthma, leprosy, ulcer | Juice |
| 37 | **Ocinum sanctum* Linn. | Lamiaceae | Leaf | Dyspepsia, gastric disease, vomiting | Decoction |
| 38 | *Parthenium hysterophorus* L. | Asteraceae | Whole plant | Skin inflammation, dysentery | Decoction |
| 39 | *Passiflora foetida* L. | Passifloraceae | Whole plant | Diarrhea, debility | Decoction |
| 40 | *Phoenix pussila* Gaertn. | Arecaceae | Fruit | Blood purifier, diabetes | Raw |
| *41* | **Phyllanthus amarus* Schum. & Thonn. | Euphorbiaceae | Whole plant | Jaundice, ulcer problems, urinary diseases | Paste |
| *42* | *Pithecolobium dulce* (Roxb.) | Mimosaceae | Whole plant | Constipation fever | Decoction |
| 43 | *Plumbago zeylanica* L. | Plumbaginaceae | Whole plant | Cancer, lung cancer, rheumatism | Powder |
| 44 | *Psidium guajava* Linn. | Myrtaceae | Whole plant | Vomiting, vitamin c, antimalarial | Tonic |

| | | | | | |
|---|---|---|---|---|---|
| 45 | *Punica granatum* (Linn.) | Punicaceae | Seed | Urinary infections, treat sore throats | Raw |
| 46 | **Ricinus communis* Linn. | Euphorbiaceae | Seed | Skin diseases, gulma, fever | Powder |
| *47* | *Sesbania grandiflora* (Linn.) Poir. | Fabaceae | Whole plant | Anaemia, gastralgia, diarrhoae, gulma | Juice |
| 48 | *Sida acuta* Burm.f | Malvaceae | Leaf | Diarrhea, snake bite | Powder |
| *49* | *Solanum melongena* (Linn.) | Solanaceae | Fruit | Ulcer, neuralgia, asthma, cholera | Powder |
| 50 | **Solanum nigrum* Linn. | Solanaceae | Leaf | Heal mouth, ulcer, diuretic | Juice |
| 51 | **Solanum trilobatum* (Linn.) | Solanaceae | Leaf | Cold and cough, chronic bronchitis, antibacterial, antifungal | Decoction |
| 52 | *Solanum turvum* Linn. | Solanaceae | Leaf | Diuretic cold, skin disease | Powder |
| *53* | *Stachytarpheta indica* (L.) vahl | Verbenaceae | Whole plant | Ulcers, allergy | Tonic |
| *54* | *Synadenium grantii* Hook.f. | Euphorbiaceae | Leaf | Backache, swelling | Powder |
| 55 | *Synedrella nodiflora* (L.) Gaerth. | Asteraceae | Leaf | Rheumatism, stomach pains | Powder |
| 56 | *Terminalia catappa* L. | Combretaceae | Seed | Liver diseases, ulcers | Powder |
| 57 | *Tinospora cordifolia* (Willd). Miers ex Hook. F. & Thoms. | Menispermaceae | Stem | Anaemia, asthma, skin disease | Tonic |
| 58 | *Ziziphus jujuba* Linn. | Rhamanaceae | Fruit | Anxiety, insomnia | Raw |

' * ' mark in the columns indicates the species used by local people.

**Fig. 2. Life form analysis of documented medicinal plants in the study area.**

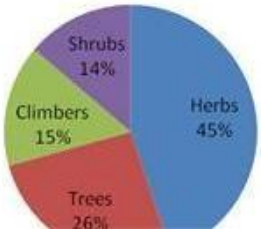



**Fig. 3. Percentage of plant parts used for the preparation of medicine.**

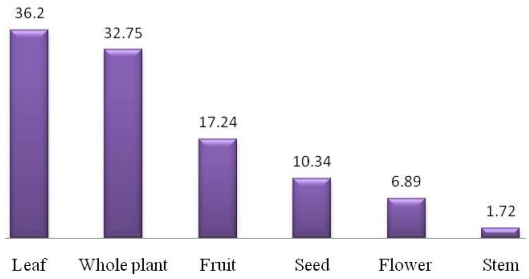
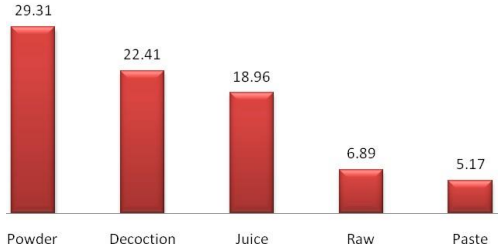



**Fig. 4. Analysis of method of preparation and utilization of plant parts**




Herbs were considered as a primary source of medicine (45%) followed by trees (26%), climbers (15%) and shrubs (14%) (Fig.2). It indicates that the study area contains more number herbs as compared to other life forms namely trees, shrubs and climbers. Among the reported plants, the leaves were mostly used for the preparation of medicine (36.20%) followed by whole plant (32.75%), fruit (17.24%), seed (10.34%), flower (6.89%) and stem (1.72%) (Fig.3). This may be due to the easy collection of leaves than that of other parts of plants such as underground parts, flowers, barks, flowers, fruits and seeds (9). Many local people throughout the world also use leaves for the preparation of herbal medicine. The mode of preparation and parts used were grouped into five categories (Fig.4). Of these, mostly used method of preparation was powder (29.31%) followed by decoction (22.41%), juice (18.96%), raw (6.89%) and paste (5.17%).

Out of 58 medicinal plants documented in the study area, only 27 plants have been used by local people inhabiting in around the study area for the treatment of various diseases like fever, intermittent fever, cough, asthma, jaundice, gastric problems, urinary disorders, dry skin disease, psoriasis, skin allergies, leucoderma, burning skin, liver disorders, snake bite, memory power, ulcer, diabetes, stomach aches etc., The plants were also to be used in different forms such as juice, decoction, powder and past (Table 1).

The list of following some medicinal plants documented from the study area viz., *Acalypha indica*, *Calotropis gigantea, Ocimum Sanctum, Lawsonia inermis, Solanum trilobatum* and *Clitoria ternatea* are commonly used by local people in the treatment of fever, cough and asthma. The following plant species such as *Acalypha indica, Aloe vera*, *Capsicum annuum*, *Carica papaya,Clitoria ternatea, Murraya koenigii and Ocimum sanctum* are also used for the treatment of dry skin disease, psoriasis, skin allergies, leucoderma, burning skin and other skin diseases.

## 4. CONCLUSION

The overall results of the present ethnobotanical investigation indicated that, the study area is rich in plants having ethno-medicinal properties that may be used to treat various diseases. But the results of present study also indicate that only less number (27) of medicinal plants is used by local people in the treatment of various ailments. Hence the people must be motivated to use more number of medicinal plants instead of using allopathic medicine and also suggested that priority must be given to conserve these medicinal plants for the welfare of humanity.

## REFERENCES


1. Prasad, L.V. (2002). *In: Indian System of Medicine and Homoeopathy Traditional Medicine in Asia.* Chaudhury Ranjit Roy, Rafei Uton Muchatar., editors. New Delhi: WHO- Regional Office for South East Asia: pp. 283-286.
2. Balakrishnan, V., P. Prema, K.C. Ravindran and J. Philip Robinson, (2009). Ethnobotanical studies among villages from Dharapuram Taluk, Tamil Nadu, India. *Global J. Pharmacol.* **3**(1): 8-14.
3. Bopana, N. and S. Saxena, (2007). *Asparagus racemosus*– ethnopharmacological evaluation and conservation needs. *J. Ethnopharmacol.* **110**(1): 1-15.
4. Heinrich, M. (2000). Ethnobotany and its role in drug development. *Phytotheraphy. Res*. **14**: 479-488.
5. Gamble, J.S. and C.E.C. Fischer, (1915-1936). The Flora of the presidency of Madras. part **1**-11. Adlard and Son Ltd; London.
6. Matthew, K.M. (1983). Flora of the Tamil Nadu Carnatic. The Rapinat Herbarium, Tamil Nadu, India. 3 Vol.
7. Vasudevan Nair, R. (1994). Indian Medicinal Plants: a compendium of 500 species, Volume 1,2,3,4,5. Orient Longman Private Limited, Himayatnagar, Hyderabad.
8. Joshi, S.G. (2000). Medicinal Plants. Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.
9. Giday, M., Z. Asfaw and Z. Woldu, (2010). Ethnomedicinal study of plants used by Sheko ethnic group of Ethiopia. *J. Ethnophrmacol.* **132**: 75-85.