



DOCUMENTATION OF FOLK KNOWLEDGE ON EDIBLE PLANTS IN SOUTHERN DISTRICTS OF TAMIL NADU

Manickam Desika, Chinnathambi Durga and Dr. Moorthy Kannan*

PG & Research Department of Botany, Vivekanandha College of Arts and Sciences for
Women (Autonomous), Tiruchengode – 637 205, Tamil Nadu, India.

Article Received on
29 Sept. 2018,

Revised on 19 Oct. 2018,
Accepted on 09 Nov. 2018

DOI: 10.20959/wjpps201812-12747

*Corresponding Author

Dr. Moorthy Kannan

PG & Research Department
of Botany, Vivekanandha
College of Arts and
Sciences for Women
(Autonomous),
Tiruchengode – 637 205,
Tamil Nadu, India.

ABSTRACT

Objective: A large number of local plants are used by local people of various districts of Southern Tamil Nadu. **Methods:** In this paper work has been done to record the locally available edible plants like green leaves, vegetable fruit, oil seeds, tuber, cereals in the aspects of botanical name, family, local name, edible part of the plants, life from and collecting season. **Results:** The locally available plants are included in regular diet of local peoples. These plants supply nutrition which are available commonly and easily affordable by local peoples. This study records 95 species of plants which are consumed in Southern districts of Tamil Nadu.

KEYWORDS: Edible plants, Diet, Nutrition, Southern Tamil Nadu.

INTRODUCTION

India is the vast country where nature has bestowed rich botanical wealth and a large number of diverse types of plants growing wild in different parts. India is one of the world 12 mega diversity centers with 47,147 plants species including all lower groups and is divided in 20 agro-eco zones. About 800 wild plants are consumed as food chiefly by tribal communities.^[1] Out of the total wild edible species of plants, about 300 species occurs in the north eastern part of India^[2-3] The regions has two biodiversity hotspots and Manipur falls in the Indo – Myanmar global biodiversity hotspots.^[4-5]

According to the India State of Forest Report (ISFR) 2015, the total forest and tree cover is 79.42 million hectare, which is 24.16 percent of the total geographical area. Population of India is 8.6 as per 2011 census. In India, the peoples depend on forests for their livelihood.

The people are very close to nature and have traditional knowledge of consuming wild plants and plant parts *viz.* tuber, shoots, leaves, fruits etc. as a source of food. Although, these wild edible plants play an important role in food security, they are ignored. Various tribal sects of India are repositories of rich knowledge on various uses of plant genetic resources. Wild edible plants play a major role in meeting the nutritional requirement of the population.^[6] Among the various kinds of plants, food plants received the earliest attention of mankind and reflect man's search for knowing more and more about the nutrient qualities of food plants. The primitive man through trial and error, has selected many wild edible plants, which are edible and subsequently domesticated them. Modern man neither domesticated the left over nor has he identified any new food plants in recent times, which are widely acceptable; they have improved only a few crop plants. The present day edible plants are particularly useful during famine and similar scarcity situation. Even during normal times, wild plants provide materials of diet to the less advanced section of human community, often referred as tribals in India who generally inhabit hilly and other less accessible tracts in both developed and developing countries.^[7]

EDIBLE PLANTS IN INDIA

In India, it is estimated that about 800 species are consumed as wild edible plants, chiefly by the tribal people. The paper reviewed on edible plants documented in different parts of Tamil Nadu and their utilization by the Local people. This study provides information about the edible leafy vegetables, Fruits, vegetables, cereals, oilseeds and Tubers available in South India and their essential in this modern world to support the benefits of their consumption. Traditional edible plants remained as the most affordable and easily accessible source of food and medicine. The south districts regions of Tamilnadu have a long history of edible plants knowledge that has remained unexplored hither to. Hence, a part of this study was initiated with an aim to record the traditional edible plants of Local village people and to document and analyse the local knowledge on food plant identification before the environmental and cultural changes depleted the resources.

MATERIALS AND METHODS

Edible plants data collection

The traditional edible plants survey is made in the view of utilization and protection of traditional information and to learn the edible plants aspects from the Southern Districts of Tamil Nadu (Dindugal, Vellore, Dharmapuri, Namakkal, Salem and Erode).

The learning part was investigated to get information from local people and also to cross check the information provided by the other practitioners during the earlier visits. During each field survey at least 15 days were spent with the local people in their tribal hamlets. In order to document the utilization of edible plants, field trips were made during the 5 months period (December 2017 – April 2018) ensuring that the dry and monsoon seasons were accommodated. The collected specimens were identified and authenticated with the help of valid references.^[8-12] Angiosperm phylogenic group III (APG III, 2009) was followed to classify the species. Nomenclature and correct author citation for all the species was thoroughly checked in data base.^[13] The information (local name of the plant, plant part used for food, method of preparation etc.) was gathered from the local people through direct interviews/oral conversations were recorded.

Collected data were done in various fields and household surveys were also done, extensively by frequent visit in different seasons. Household survey had been done to document the edible wild vegetables they use. This survey was conducted in various villages of the study area; Ethno botanical information was also collected. Photographs were also taken for some specimens. Ultimately data were analyzed and made into tabular form.

RESULTS AND DISCUSSION

Edible Plants Survey

Wild edible plants (WEPs) refer to species that are neither cultivated nor domesticated, but available from their natural habitat and used as sources of food. WEPs are gathered for food, nutrition and livelihoods by different Cultures around the world. These plants are gathered from varied habitats from natural forests, agricultural fields to human disturbed areas such as roadsides and wastelands. Forest forms the most important source of wild foods for rural households and forest inhabitants. Among some indigenous people utilization of WEPs is integral component of their culture.

Various studies have found wild edible plants potential source of nutrition while in many cases are more nutritious than conventionally eaten crops. Besides food and nutrition, utilization of wild foods as coping strategies during scarcity is prevalent, particularly in developing countries where food insecurity is more acute. Diversity of plant foods consumed provides nutritional diversity and also food during famine or scarcity of favored foods. Potential of WEPs in providing source of income and livelihoods in rural settings is acknowledged around the world. The Tribal communities are dependent on forest for habitat

and other needs for well-being; the forest contributes livelihoods to many households as well. The objective of the present investigation is to study wild and domestic food plants diversity in different districts of Tamil Nadu used by rural communities.

A total of 95 plant species has been listed in **Table 1**. Based on the usage the plants were classified under greens, vegetables, fruits, seeds, tubers which are utilized by the local peoples. 25 greens like *Digera muricata*, *Coccinca grandis*, *Alternanthera sessilis*, *Solanum nigrum* were familiar in the part of diet among the local people. The fleshy fruits are eaten raw form; these fruits were rich in vitamins and minerals. 9 tuber plant species were commonly consumed by the seasonal availability. Oil seeds and cereals were regularly included in their diet. 25 vegetable plant species are listed and these plant species are mostly consumed after cooking and they are rich in vitamins.

Many wild plant foods reported from different district of Tamil Nadu have multiple functions like medicine, animal feed, building materials, religious and material needs and source of livelihoods. Many plants double as food and medicine while some food plants as food, medicine and feed this invaluable dynamic link illustrates the indirect benefits of WEPs to mankind through consumption of livestock or its products.

Many households collect food plants and other minor products from different district of Tamil Nadu and sell them in local markets to earn cash income. The forest thus, is also vital source of livelihoods and well-being for rural landless families. The ecological function is equally important. The forest, therefore, needs urgent prioritization for conservation for maintaining goods and services, and ecological stability.

Table 1: Edible plants used by local people in South Districts of Tamil Nadu.

Botanical Name	Family	Local Name	Part(s) Used	Life Form	Collecting season
<i>Abelmoschus esculentus</i> (L.) Moench	Malvaceae	Vendai	Vegetable	Herb	Summer
<i>Achyranthes aspera</i> L.	Amaranthaceae	Nayuruvi	Leaves	Herb	Round the year
<i>Aerva javanica</i> var. <i>bovei</i> Webb	Amaranthaceae	Poolai	Leaves	Herb	Round the year
<i>Allium cepa</i> L.	Amaryllidaceae	Vengayam	Vegetable	Herb	Mid-Summer
<i>Allium sativum</i> L.	Amaryllidaceae	Poondur	Bulbs	Herb	Spring
<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	Amaranthaceae	Ponnankanni	Leaves	Shrub	Rainy
<i>Amaranthus viridis</i> L.	Amaranthaceae	Kuppaikerai	Leaves	Herb	Rainy
<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson	Dioscoreaceae	Anaithandu	Tuber	Shrub	Summer
<i>Ananas comosus</i> (L.) Merr.	Bromeliaceae	Annachi	Fruit	Shrub	Summer

<i>Annona squamosa</i> L.	Annonaceae	Seethapalam	Fruit	Tree	Winter
<i>Arachis hypogaea</i> L.	Fabaceae	Kadalai	Seed	Shrub	Summer
<i>Artocarpus heterophyllus</i> Lam.	Moraceae	Pala	Fruit	Tree	Summer
<i>Asparagus racemosus</i> Willd.	Asparagaceae	Thaneervittan	Tuber	Shrub	Summer
<i>Azadirachta indica</i> A.Juss.	Meliaceae	Vaambu	Seed	Tree	Rainy
<i>Basella alba</i> L.	Brassellaceae	PasalaiKerai	Leaves & Fruit	Shrub	Round the year
<i>Bauhinia racemosa</i> Lam.	Caesalpinaceae	AananThamabi	Young Leaves	Tree	Round the year
<i>Beta vulgaris</i> L.	Amaranthaceae	Sengkilangu	Tuber	Herb	Winter
<i>Brassica caulorapa</i> (DC.) Pasq.	Brassicaceae	Knoolkhol	Tuber	Herb	Spring
<i>Brassica juncea</i> (L.) Czern.	Brassicaceae	Kadugu	Seed	Shrub	Winter
<i>Brassica oleracea</i> L.	Brassicaceae	Muttaikosu	Vegetable	Climber	Spring
<i>Brassica oleracea</i> L.	Brassicaceae	Pookosu	Flower	Herb	Spring
<i>Brassica rapa</i> L.	Brassicaceae	Turnip	Tuber	Herb	Winter
<i>Cajanus acutifolius</i> (F.Muell.) Maesen	Fabaceae	Thuvarai	Seed	Shrub	Rainy
<i>Canavalia gladiata</i> (Jacq.) DC.	Fabaceae	Sword Bean	Seed	Shrub	Rainy
<i>Capsicum annuum</i> L.	Solanaceae	Milagai	Vegetable	Herb	Round the year
<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Mudakathan	Whole Plant	Herb	Rainy
<i>Carica papaya</i> L.	Caricaceae	Papaali	Fruit	Tree	Round the year
<i>Celosia argentea</i> L.	Amaranthaceae	Pannaikeraai	Leaves	Shrub	Rainy
<i>Centella asiatica</i> (L.) Urb.	Apiaceae	Vallarai	Leaves	Herb	Rainy
<i>Cicer arietinum</i> L.	Fabaceae	Kadalai	Seed	Shrub	Winter
<i>Citrullus lanatus</i> (Thunb.) Matsum. & Nakai	Cucurbitaceae	Dharpoosani	Fruit	Climber	Summer
<i>Citrus aurantium</i> L.	Rutaceae	Kichalipalam	Fruit	Tree	Winter
<i>Citrus limon</i> (L.) Osbeck	Rutaceae	Elumichai	Fruit	Tree	Summer
<i>Cleome viscosa</i> L.	Capparidaceae	Naavazhai	Leaves	Herb	Round the year
<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	Kovai	Leaves & Fruit	Herb	Rainy
<i>Cocos nucifera</i> L.	Arecaceae	Thaengaai	Seed	Tree	Round the year
<i>Coriandrum sativum</i> L.	Apiaceae	Kothamalli	Leaves	Herb	Summer
<i>Cucumis sativus</i> L.	Cucurbitaceae	Vellari	Fruit	Tree	Summer
<i>Cucurbita pepo</i> L.	Cucurbitaceae	Poosani	Vegetable	Climber	Winter
<i>Curcuma longa</i> L.	Zingiberaceae	Manjal	Tuber	Shrub	Winter
<i>Cyperus rotundus</i> L.	Cyperaceae	Korai	Tuber	Herb	Summer
<i>Daucus carota</i> L.	Apiaceae	Carrot	Tuber	Herb	Summer
<i>Decalepis hamiltonii</i> Wight & Arn.	Apocynaceae	Peru Nannari	Tuber	Shrub	Winter
<i>Digera muricata</i> (L.) Mart.	Amaranthaceae	ThoiyaKeerai	Leaves & Seed	Herb	Rainy
<i>Euphorbia hirta</i> L.	Euphorbiaceae	Amman Pacharisi	Leaves	Herb	Round the year
<i>Ficus carica</i> L.	Moraceae	Athi	Fruit	Tree	Round the year
<i>Fragaria ananassa</i> (Duchesne ex Weston) Rozier	Rosaceae	Semputrupalam	Fruit	Herb	Winter
<i>Glycine max</i> (L.) Merr.	Fabaceae	Soya	Seed	Shrub	Rainy
<i>Helianthus annuus</i> L.	Asteraceae	Sooriyagandhi	Seed	Shrub	Summer
<i>Hibiscus cannabinus</i> L.	Malvaceae	PulichaiKeerai	Young Leaves	Herb	Rainy
<i>Ipomoea batatas</i> (L.) Lam.	Musaceae	Sarkaravalli	Tuber	Shrub	Winter
<i>Lagenaria siceraria</i> (Molina) Standl.	Cucurbitaceae	Suraikai	Vegetable	climber	Rainy

<i>Luffa acutangula</i> (L.) Roxb.	Cucurbitaceae	Pudalai	Vegetable	Climber	Spring
<i>Lycopersicon esculentum</i> Mill.	Solanaceae	Thakkali	Fruit	Herb	Spring
<i>Macrotyloma uniflorum</i> (Lam.) Verdc.	Leguminosae	Kollu	Seed	Shrub	Winter
<i>Malus pumila</i> Mill.	Rosaceae	Arathipalam	Fruit	Tree	Winter
<i>Mangifera indica</i> L.	Anacardiaceae	Mangai	Fruit	Tree	Summer
<i>Manihot esculenta</i> Crantz	Euphorbiaceae	Maravalli	Tuber	Herb	Summer
<i>Menthapiperita</i> L.	Lamiaceae	Puthina	Leaves	Herb	Rainy
<i>Momordica charantia</i> L.	Cucurbitaceae	Pakarkai	Vegetable	Climber	Summer
<i>Moringa oleifera</i> Lam.	Moringaceae	Murungai	Leaves & Fruit	Tree	Round the year
<i>Moringa oleifera</i> Lam.	Moringaceae	Murungai	Vegetable	Tree	Winter
<i>Murraya koenigii</i> (L.) Spreng.	Rutaceae	Karuvaeppilai	Leaves	Tree	Round the year
<i>Musa paradisiaca</i> L.	Musaceae	Valai	Fruit	Tree	Round the year
<i>Passiflora foetida</i> L.	Passifloraceae	PoonaiSedi	Leaves	Shrub	Rainy
<i>Pergularia daemia</i> (Forssk.) Chiov.	Asdepiadaceae	Vaeliparuthi	Leaves	Herb	Rainy
<i>Persea americana</i> Mill.	Lauraceae	Vennaipalam	Fruit	Tree	Summer
<i>Phaseolus vulgaris</i> L.	Fabaceae	Beans	Vegetable	Herb	Summer
<i>Phoenix dactylifera</i> L.	Arecaceae	Paerichai	Fruit	Tree	Summer
<i>Pisum sativum</i> L.	Fabaceae	Pattani	Vegetable	Herb	Spring
<i>Poinciana elata</i> L.	Fabaceae	Vathanarayanan	Young Leaves	Tree	Round the year
<i>Pouteria sapota</i> (Jacq.) H.E.Moore&Stearn	Sapotaceae	Sappota	Fruit	Tree	Rainy
<i>Prunus persica</i> (L.) Batsch	Rosaceae	Peach	Fruit	Tree	Summer
<i>Psidium guajava</i> L.	Myrtaceae	Koyya	Fruit	Tree	Winter
<i>Punica granatum</i> L.	Lythraceae	Mathulai	Fruit	Tree	Round the year
<i>Pyrus communis</i> L.	Rosaceae	Paerikai	Fruit	Tree	Summer
<i>Raphanus raphanistrum</i> L.	Brassicaceae	Mullangi	Tuber	Shrub	Spring
<i>Ribes uva-crispa</i> L.	Grossulariaceae	Nellikikai	Fruit	Tree	Summer
<i>Ricinus communis</i> L.	Euphorbiaceae	Amanakku	Seed	Shrub	Rainy
<i>Rubus armeniacus</i> Sudre	Rosaceae	Nagapalam	Fruit	Tree	Summer
<i>Sesamum indicum</i> L.	Pedaliaceae	Ellu	Seed	Shrub	Rainy
<i>Solanum melongena</i> L.	Solanaceae	Kathiri	Vegetable	Shrub	Summer
<i>Solanum nigrum</i> L.	Solanaceae	Manithakkali	Leaves & Fruit	Shrub	Round the year
<i>Solanum trilobatum</i> L.	Solanaceae	Thuthuvalai	Whole Plant	Herb	Round the year
<i>Tamarindus indica</i> L.	Fabaceae	Puli	Fruit	Tree	Summer
<i>Terminalia catappa</i> L.	Combretaceae	Badham	Seed	Tree	Rainy
<i>Tribulus terrestris</i> L.	Zygophylleaceae	Nerunji	Leaves	Herb	Rainy
<i>Trichosanthes cucumerina</i> L.	Cucurbitaceae	Pudalai	Vegetable	Climber	Winter
<i>Vigna mungo</i> (L.) Hepper	Fabaceae	Ulundu	Seed	Shrub	Summer
<i>Vigna radiata</i> (L.) R.Wilczek	Fabaceae	Pachaipayiru	Seed	Shrub	Winter
<i>Vigna unguiculata</i> (L.) Walp.	Fabaceae	Thattaipairu	Seed	Shrub	Round the year
<i>Vitis vinifera</i> L.	Vitaceae	Thiratchai	Fruit	Climber	Autumn
<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Amukkara	Leaves & Root	Herb	Rainy
<i>Zingiber officinale</i> Roscoe	Zingiberaceae	Inchi	Tuber	Shrub	Winter
<i>Ziziphus jujuba</i> Mill.	Rhamnaceae	Elandhai	Fruit	Tree	Summer

Plants derived products in particular have been employed in the high nutrient value food of illness and diseases due to their high nutrient properties. Given the alarming increase in life frightening illness, researchers are turning their attention to edible plants looking for new leads to develop better drugs against insufficient nutrient energy. Although a number of plant species have been tested for nutrient properties, a vast majority have not been adequately evaluated. The results of the present study seem to be promising and may enhance the uses of natural products, showing the potential of these plants in the edible plants of insufficient nutrient energy. According to field observation the consumption of vegetables, greens, fruits, oil seeds, cereals play a vital role in providing nutrient to the local peoples. They include various plant species in their diet instead of depending on limited plants source. Hence they fulfil their nutrient requirements in a balanced way. This also helps to prevent the exploitation of a particular plant species.

CONCLUSION

To conclude, the present study reveals that the high diversity of edible plants and the traditional knowledge about the use, preparation and application for the edible rationale among the local people of Tamil Nadu, is still a major part of their life and culture. The observations given and the new claims recorded from the study area and will contribute for the welfare of our human kind. This could add a new knowledge for the formulation of new high nutritional food products. The decline in the use of plants by the younger generation may gradually lead to the fading away of indigenous knowledge associated with the plants. It will definitely create an awareness among the insufficient nutrient patients for taking control or preventive measures based on edible plants what we are mentioned. Traditional knowledge of wild food plants is passed orally from parents to children through words of mouth. Children learn names of wild foods at home collected by their parents. They learn to identify the plant and parts collected by accompanying their parents to forests. Later, utilizing their experience, children collect plant foods by themselves; parents/elders correct them for any error or deficiency. Girls usually acquire knowledge of cooking from mothers and grandmothers while the males learn cooking from varied sources as their activities are more diversified and mostly outside the house. In tribal societies cooking foods is considered as exclusive occupation of females and for this, culinary knowledge is a qualification for marriage.

ACKNOWLEDGMENTS

Dr. M. Kannan wish to thank Head and Faculty Members of PG & Research Department of Botany for valuable support in the form of Student Research Project and also thank to the Management of Vivekanandha College of Arts and Sciences for Women (Autonomous), Elayampalayam, Tiruchengode - 637 205 for providing lab facilities.

REFERENCES

1. Singh HB, Arora RK. Wild edible plants of India, ICAR, New Delh, 1978.
2. Watt, G., 1889-1893. The Dictionary of Economic Products of India, 6, Supdt., Govt. Printing, Calcutta.
3. Kanjilal, U.N., Kanjilal, P.C., Das, A., Bor, N.L., 1934-1940. Flora of Assam. 1-4. Government of Assam, Shillong.
4. Mittermeier, R.A., Gils; P.R.; Hoffman, M.; Pilgrim, J.; Brooks, T.; Mittermeier, C.G.; Lamoreaux, J.; Da Fonseca, G.A.B. (eds.). 2004. Hotspots Revisited. Earth's Biologically Richest and Most Endnagered Terrestrial Ecoregions. USA: CEMEX.
5. Myers, N.; Mittermeier, R.A.; Mittermeier, C.G.; Da Fonseca, G.A.B.; Kent, J. 2000. Biodiversity hotspots for conservation priorities. In Nature, 403(24): 853-858.
6. Khoshoo T N (1991). Conservation of biodiversity in biosphere, In: Indian Geosphere Biosphere Programme, Some aspects, National Academy of Sciences, Allahabad, India: 178-233.
7. Arora R K & Pandey Anjula, Wild edible plants of India: Diversity, Conservation and Use, (National Bureau of Plant Genetic Resources, New Delhi), 1996; 1
8. Henry, A.N., Chitra, V., Balakrishnan, N.P. 1987. *Flora of Tamil Nadu, India*. Series I: Analysis. Vol.3. Coimbatore: Botanical Survey of India.
9. Henry, A.N., Kumari, G.R., Chitra, V. 1989. *Flora of Tamil Nadu, India*. Series I: Analysis. Vol. 2. Coimbatore: Botanical Survey of India, 258.
10. Gamble, J.S., Fischer, C.E.C. 1921-1935. *Flora of the Presidency of Madras* (Vol. 1-3), London: Adlard and Son Ltd.
11. Matthew, K.M. 1991. *An excursion Flora of Central Tamil Nadu. Tiruchirappalli*: Rapinat Herbarium.
12. Bor, N.L. 1960. *The grasses of Burma, Ceylon, India and Pakistan*. London: Pergamon Press.
13. Tropicos, 2012. Electronic database accessible at <http://tropicos.org/NameSearch.aspx> captured on 27 January 2012.