

SHORT COMMUNICATION

Wild edible plant resources used by the *Irulas* of the Maruthamalai Hills, Southern Western Ghats, Coimbatore, Tamil Nadu

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A survey of wild edible and food plants was undertaken and identified various species used by the ethnic tribe *Irulas* and local inhabitants of Maruthamalai hills, located in the Coimbatore district, Southern Western Ghats of Tamil Nadu, India. Among the species used by these people many are commonly found and eaten throughout India. The local tribal community depends for their dietary requirements since a long time using these plants. Plant species with their family names, vernacular names, habit and plant parts used are tabulated.

Keywords: Wild edible plants, *Irulas* tribe, Maruthamalai hills, Southern Western Ghats, Tamil Nadu.

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Introduction

There are at least 3000 edible plant species known to mankind but just about 30 crops alone contribute to more than 90% of the world's calorie intake and only 120 crops are economically important at the national scale¹. This shows that several hundreds of plants are still discarded or unidentified at the hands of various human societies. Millions of people in many developing countries do not enough food to meet their daily requirement and a lack of one or more nutrients¹. 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 plants². Wild food also contributes to the house-hold income security of millions of forest depend communities³. It plays a major role in meeting the nutritional requirement of the tribal population in remote parts of the country throughout the year⁴⁻¹⁰. Various tribal sections of India are repositories of rich knowledge on various uses of plant genetic resources. Tribes constitute an

important compound representing about 8% of the total population of India. It is about, 1.04 % of the total population of Tamil Nadu¹¹. Tamil Nadu is the home of as many as 36 different tribal communities and in terms of concentration of tribal population. Coimbatore district is known for its forests and there are six ethnic tribes inhabiting the Western Ghats, *Irulas*, *Malasaras*, *Puliyar*, *Kadars* and *Muthuvars* constitute the dominant groups. Among them, the tribe *Irulas* lives in Maruthamalai hills.

Maruthamalai hills harbor a large number of trees, shrubs and climbers and a wealth of non-timber forest products (NTFP) including medicinal and aromatic plants (MAP), and wild edible plants. Some studies have been conducted in Maruthamalai on ethnomedicinal plants used by the tribal communities^{12, 13}, but there is paucity of information on edible plants of these regions. Many wild plant species are believed to possess edible value and not documented yet^{14, 15}. Therefore, the present study was conducted to provide base line data that can be helpful in ensuring sustainable utilization of wild edible plants of Maruthamalai hills.

Study Area

The present study has been undertaken at Maruthamalai hills (11.04°E of longitude and 76.93°N of latitude) situated in the Southern Western Ghats, Coimbatore. It consists of an environment of moist dry deciduous type of forest at an altitude of 426.72 m. MSL. The area has a predominant red soil impregnated with organic matter, and granite, bed rock is overlaid with shallow, sandy loam, and glacial soils are moderate to well drained. Temperature begins increasing after March. April is the hottest month with a near daily maximum temperature of 38.2°C and minimum of 25.6 °C. The maximum temperature may go up to 41°C and 16 °C, respectively.

The average rainfall received in the Coimbatore district is 670-699 mm for the past 20 years. Due to the presence of the mountain pass major parts of the district from the South–West monsoon in the months from June to August. The rainfall of the South – West monsoon is irregular as the masses of clouds are

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intercepted by the hills which border the district on south – west and north – west and bringing only very little rain in September.

Methodology

Intensive and extensive ethnobotanical studies were conducted throughout the Maruthamalai hills at regular intervals from 2011-2012. This has resulted in the information about all wild edible plant species and materials of Maruthamalai Hills. During the field visits, the usage of wild fruits was gathered from the local herbal medical practitioners and elderly people of the tribe *Irulas*, who have a very long acquaintance with the usage of plants. The plant specimens were collected in their flowering and fruiting stage for voucher specimens based on the standard instructions¹⁶. All the plant specimens collected during the survey were identified with help of various local floras¹⁷⁻²³. Further their identification was confirmed at Madras Herbarium (MH) of Botanical Survey of India, Southern Regional Centre, Coimbatore. The herbarium specimens were deposited in the Herbarium of Department of Botany, Bharathiar University, Coimbatore.

Result and Discussion

Wild plants gathering and exploitation is a common activity of the indigenous people in Maruthamalai hills, Coimbatore district. A total of 68 wild edible plants belonging to 56 genera and

spreading over 39 families (64 dicots and 4 monocots) were collected from this region. Of the various parts, they consume rhizomes, roots and tubers of 14 plants species; fruits of 35 plant species; leaves of 11 plant species; seeds and arils of 7 plant species; stem pith of 1 plant species. The plant parts are either eaten raw or cooked and eaten. The people rarely use the roots of *Ipomoea staphylina* Roem. & Schult. (*Oanamkodi*) as food. Tubers of *Asparagus racemosus* Willd. (*Neervalli*) and *Dioscorea oppositifolia* L. (*Vethalaivalli*).

Regular consumption of fruits like *Artocarpus heterophyllus* Lam. (*Pala*), *Annona squamosa* L. (*Setha*), *Capparis zeylanica* L. (*Kaathatikani*), *Ficus benghalensis* L. (*Alamaram*), *Ficus racemosa* L. (*Atthi*), *Mangifera indica* L. (*Maa*), *Mucuna atropurpurea* DC. (*Thellukka*), *Passiflora foetida* L. (*Poonakkali*), *Phyllanthus emblica* L. (*Kattuneelli*) and *Physalis minima* L. (*Kuttythakkali*) were recorded from the tribes. Regular consumption of fruit is associated with reduced risks of cancer, cardiovascular diseases (especially coronary heart disease), stroke, Alzheimer disease, cataracts and some of the functional diseases associated with ageing^{24, 25}. Domestication grew out of food gathering almost imperceptibly led to cultivation^{26, 27}.

The collected information on species other than the discussed above have been tabulated alphabetically with plant name(s), family, vernacular name(s), habit and plant part(s) used (Table 1).

Table 1—Wild edible plants consumed by tribal (*Irulas*) and local inhabitants of Maruthamalai Hills

| Botanical name | Family | Vernacular name | Habit | Plant part(s) used |
|--|----------------|---------------------|---------|--------------------|
| <i>Atylosia scarabaeoides</i> (L.) Benth., | Fabaceae | Kattuthuvarai | Climber | Seed |
| <i>Azadirachta indica</i> A. Juss. | Meliaceae | Vembu | Tree | Fruit |
| <i>Alternanthera sessilis</i> DC. | Amaranthaceae | Ponangkanni | Herb | Leaves |
| <i>Basella alba</i> L. | Chenopodiaceae | Kattupasalai | Herb | Leaves and stem |
| <i>Begonia malabarica</i> Lam. | Begoniaceae | Narayanananjivi | Shrub | Leaves |
| <i>Boerhavia diffusa</i> L. | Nyctaginaceae | Mookkanacharana | Herb | Leaves |
| <i>Boerhavia erecta</i> L. | Nyctaginaceae | Kuthucharana | Herb | Leaves |
| <i>Borassus flabellifer</i> L. | Arecaceae | Panai | Tree | Fruit |
| <i>Brassica juncea</i> Czern. & Coss. | Brassicaceae | Kadugu | Herb | Seed |
| <i>Canavalia gladiata</i> (Jacq.) DC. | Fabaceae | Tampattai | Climber | Fruits |
| <i>Canavalia mollis</i> Wight & Arn. | Fabaceae | Kattuthampattai | Climber | Fruits |
| <i>Canna indica</i> L. | Cannaceae | Kalvazhai | Herb | Rhizome |
| <i>Canthium parviflorum</i> Lam. | Rubiaceae | Periyakarai | Shrub | Leaves and fruits |
| <i>Caralluma adscendens</i> R. Br. | Asclepiadaceae | Periyasirumankeerai | Herb | Fruits |
| <i>Cardiospermum halicacabum</i> L. | Sapindaceae | Mudakkathan | Climber | Stem |
| <i>Cissus quadrangularis</i> L. | Vitaceae | Pirandai | Climber | Stem and leaves |
| <i>Coccinia grandis</i> (L.) Voigt | Cucurbitaceae | Kovai | Climber | Leaves and fruits |

(Contd.)

Table 1—Wild edible plants consumed by tribal (*Irulas*) and local inhabitants of Maruthamalai Hills—Contd.

| Botanical name | Family | Vernacular name | Habit | Plant part(s) used |
|--|----------------|-------------------|-------------|--------------------|
| <i>Cocculus hirsutus</i> (L.) Diels | Menispermaceae | Vellakattukkodi | Climber | Leaves |
| <i>Commelina benghalensis</i> L. | Commelinaceae | Amala | Herb | Leaves |
| <i>Cucumis dipsaceus</i> Enherb. | Cucurbitaceae | Mullampanrivelari | Climber | Fruits |
| <i>Diplocyclos palmatus</i> Jeffrey. | Cucurbitaceae | Sivalingakkai | Climber | Leaves and fruits |
| <i>Dolichos trilobatus</i> L. | Fabaceae | Minima | Climber | Tuber and seed |
| <i>Ficus religiosa</i> L. | Moraceae | Arasu | Tree | Fruit |
| <i>Grewia flavescens</i> Juss | Tiliaceae | Odaachu | Straggler | Fruits |
| <i>Grewia tiliifolia</i> Vahl. | Tiliaceae | - | Shrub | Fruits |
| <i>Hemidesmus indicus</i> (L.) R.Br. | Periplocaceae | Nannari | Climber | Fruits |
| <i>Hibiscus lunarifolius</i> Willd. | Malvaceae | kattuvedai | Shrub | Fruits |
| <i>Hybanthus enneaspermus</i> (L.f.) F.v. Muell | Violaceae | Orithalthamarai | Herb | Leaves |
| <i>Jasminum auriculatum</i> Vahl. | Oleaceae | Kattumullai | Climber | Leaves |
| <i>Lantana camara</i> L. | Verbenaceae | Uni | Herb | Fruits |
| <i>Moringa concanensis</i> Nimmo ex Dalz. & Gibson | Moringaceae | kattumurungai | Tree | Leaves and fruits |
| <i>Mucuna atropurpurea</i> DC. | Fabaceae | Thellukka | Climber | Fruit |
| <i>Mukia maderaspatana</i> (L.) M. Roemer | Cucurbitaceae | Musumosakkai | Climber | Fruit |
| <i>Neonotonia wightii</i> (W.A.) Lackey | Fabaceae | Kattumochai | Climber | Seed |
| <i>Passiflora foetida</i> L. | Passifloraceae | Poonakkali | Climber | Fruits |
| <i>Pavetta indica</i> L. | Rubiaceae | Pavattai | Shrub | Fruits |
| <i>Phyllanthus reticulatus</i> Poir. | Euphorbiaceae | Poola | Shrub | Fruits |
| <i>Rhynchosia cana</i> (Willd.) DC. | Fabaceae | Kattuthuvarai | Climber | Seed |
| <i>Senna occidentalis</i> (L.) Link | Caesalpinaceae | Ponnavarai | Under shrub | Tender pods |
| <i>Sesbania grandiflora</i> (L.) Poiret | Fabaceae | Agathi | Tree | Leaves |
| <i>Solanum erianthum</i> D. Don | Solanaceae | Kattuchundai | Shrub | Fruits |
| <i>Solanum nigrum</i> L. | Solanaceae | Manarthakkali | Herb | Leaves and fruits |
| <i>Solanum surattense</i> Burm. f. | Solanaceae | Kandakathari | Shrub | Fruits |
| <i>Teramnus labialis</i> (L.f.) Spreng. | Fabaceae | Kattukannam | Climber | Seed |
| <i>Vigna radiata</i> (L.) Wilez | Fabaceae | Kattupasipayaru | Climber | Pod and seed |
| <i>Vigna trilobata</i> (L.) Verdcourt | Fabaceae | Kalapayaru | Climber | Seed |
| <i>Ziziphus oenoplia</i> Mill. | Rhamnaceae | Pulichchi | Shrub | Fruits |

Conclusion

According to the field observation, tourism has resulted in the depletion of natural forest resources. Due to urbanization, the traditional knowledge on the use of plants by tribal and local inhabitants is fast vanishing. The oral transferable of the indigenous knowledge of conventional use of wild plants between elder and younger generation is not always ensured. Now – a- days the traditional knowledge is declining due to lack of interest in the present generation and also absence of records about the useful plants. Based on the present study, it is suggested that the nutritional analysis of some potential underutilized plant species may lead to the discovery of a new food sources then it will help to protect the intellectual property of these tribe. There is an urgent need to document the knowledge or otherwise it will be lost forever.

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