

## Ethnobotanical Study Of Wild Edible Plants Used By The Kani Tribes Of Pechiparai Hills, Western Ghats, India

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### ABSTRACT

Wild edible plants are those with one or more edible parts that can be used as food if collected at the appropriate growth stage and prepared appropriately. The study documented the wild edible plants used by the *Kani* tribes in the Pechiparai hills of Kanniyakumari Wildlife Sanctuary, southern Western Ghats. The study revealed that a total of 50 wild edible fruit plants belonging to 32 families and 41 genera were found to be used as food by the inhabitants of the study area. Among the 50 species of edible plants collected from this area 49 species belong to Angiosperm and one species is Gymnosperm. Nineteen species of edible plants are eaten raw or ripe and 31 plants are cooked food. The uses of wild edibles are now mainly confined to tribal or allied community. Scientific research on suitable species is suggested to identify the competent species to replace the common cultivated species in nutraceutical value and also to explore the possibilities of wild edible plants to provide food security for the growing population.

**Keywords:** Edible plants; Ethnobotanical survey; Food security;

### INTRODUCTION

Food and nutritional security are the key issues in developing countries due to insufficiency and poor access to food. Forests have a large and indispensable role to play in improving food security of tribes. Wild edible plants are important in the livelihood strategies of forest dwellers/tribal populations because they help the people to meet one of their most important basic needs the food. While these foods are not widely accessible, locally they are of great relevance for nutrition and food security in many countries. India has a tribal population of 42 million of which some 60% live in forest areas and depend on forest for various edible products. Wild edible plants are much important than is generally assumed in

the food supplies of many countries some wild foods are used as staples or as basic components of substantial meals.

The diversity of wild edible plants helps the ethnic groups in many ways. Gathering of wild edibles, preserving them and consuming them during times of food scarcity have been practiced from long history among the tribal communities. In the past, the collection and the selling of non timber forest products and other forest products was treated as the primary source of income for the primitive tribes, but nowadays with the degradation of forest, these practices are also going extinct along with the indigenous traditional knowledge associated with. Nowadays, only certain primitive tribes which inhabit the interior forests mainly depend on the forest resources. The present study highlights the wild edibles plants used by the *Kani* tribes of Pechiparai hills of Kanniyakumari Wildlife Sanctuary, southern Western Ghats.

## Materials and Methods

The study was conducted among the Kani inhabiting the Pechiparai Reserve Forest (08°26.945'N; 077°18.501'E) situated in the foothills of Kanyakumari Wildlife Sanctuary at an altitude of 57 m a.s.l. (Fig. 1). Kanis are basically agriculturists, who make the southern Western Ghats of Kanyakumari, Tirunelveli and Trivandrum districts of south India their home. In the Kanyakumari forest division, an extent of 1250.05 ha of forest land has been allotted to 927 Kani families of 47 settlements under the tribal development scheme. The vegetation of the Kanyakumari Wildlife Sanctuary ranges from Southern Thorn Forests, Dry Deciduous and Moist Deciduous, Semi-Evergreen Forests to Evergreen Sholas with Grassy Downs.

The survey was carried out from September 2017 to October 2018. Ethnomedicinal information of wild edible plants was collected from the indigenous people through direct interview/ conversation by using the rules postulated by the Nagoya Protocol. Plant samples were collected by trekking in the forest and some of the plants were identified in the field itself. Photographs were taken. During collection the taxa were classified according to their habit: herb, shrub, tree, liana and climber. Plant samples were collected for the preparation of voucher specimens. Voucher specimens were deposited in the Department of Botany and Research Centre, Scott Christian College, Nagercoil. The Angiosperm Phylogeny Classification (APG 111, 2009) was followed to classify the taxa. The plant specimens were identified with the help of local and regional floras (Gamble and Fischer, 1956; Nair and Henry, 1983). In order to check the spelling, eliminate the use of older synonyms and ensure uniform nomenclature all plant names were verified using The Plant List (2013).



**Figure 1.** An overview of the study area

## Result and Discussion

In the present study, 50 species of wild edible plants eaten by Kanis have been recorded and tabulated according to their botanical name, local name, common name, family mode of utilization (Table 1), in which Moraceae and Fabaceae was the dominant family in terms of species richness (4 species each), followed by Dioscoreaceae, Anacardiaceae, Apocyanaceae and Rhamnaceae (3 species each), Arecaceae, Rutaceae, Solanaceae, Lamiaceae, Phyllanthaceae, Piperaceae, Myrtaceae and Sapotaceae (2 species each), whereas, 13 families (Annonaceae, Araceae, Caesalpiniaceae, Cycadaceae, Passifloraceae, Poaceae, Cucurbitaceae, Costaceae, Clusiaceae, Combretaceae, Liliaceae, Myristicaceae, Sapindaceae and Smilacaceae) are monospecific. Of the 50 species of edible plants collected from this area, 49 species belonging to Angiosperms and a species of Gymnosperm are also reported. The study indicates the extensive use of wild edible plants by Kanis of Pechiparai hills of southern Western Ghats, Tamilnadu.

Due to short duration or short shelf life of wild edibles, the plants are consumed immediately or preserved (sun/shade dried) for use when nothing fresh is available either in the wild or homestead (Sundriyal and Sundriyal, 2003; Sawian *et al.*, 2007; Jeeva, 2009; Geetha *et al.*, 2015; Brintha and Jeeva, 2022; Malarvizhi *et al.*, 2022). The *Phyllanthus emblica* is the most common species eaten raw, which is a rich source of vitamin C. Similarly, dried fruits are stored for future use, which is highly medicinal and used to cure cold, cough and other throat infections (Saini *et al.*, 2022). Moreover, the *Phyllanthus emblica*, *Terminalia bellirica* and *Terminalia chebula* are jointly used in the preparation of famous Ayurvedic medicine known as ‘Triphala’. Ayyanar and Ignacimuthu (2011) and Sukumaran *et al.* (2021) have reported that maximum species of medicinal plants are being used by the Kanis of Western Ghats. Moreover, several wild edible fruits tend to be nutritious and medicinal. It is remarkable to mention that in a year, not less than six to eight plant

species will be in fruiting in each month and majority of these wild edible fruits belong to Anacardiaceae, Apocynaceae, Euphorbiaceae, Moraceae and Sapotaceae families (Mundaragi *et al.*, 2017).

## CONCLUSION

The *Kanis* of southern Western Ghats are rich in traditional knowledge due to long term association with forests. The present study demonstrated that wild edible fruit plants provide *Kanis* with a wide range services including food sources, herbal medicines, timber, firewood which are important to their livelihood. The habit of using wild edible plants is still alive in the study area, but is disappearing slowly and giving alarm to conservation and documentation of indigenous and tradition knowledge. Therefore, it is vital to do more research on potential wild edible fruits as millions of people throughout the world make extensive use of this category of plant resources to fulfill their livelihood needs and often have considerable knowledge on their uses with scientific validation. It is also important to record, preserve and infuse this knowledge to the future upcoming generation. Hence, this valuable information needs to be documented before it disappears and cause heavy loss to human health.

**Table 1.** Wild edible plants commonly used by the *Kanis* of the study area

S. No	Botanical Name	Local name	Common name	Family
1.	<i>Aegle marmelos</i> (L.) Correa	Vilvam	Bael	Rutaceae
2.	<i>Anana scosmosus</i> (L.) Merr.	Prethipazham	Pine apple	Anacardiaceae
3.	<i>Anacardium occidentale</i> L.	Kollampazham	Cashew	Ancardiaceae
4.	<i>Annona muricata</i> L.	Mullumuthri	Graviola	Annonaceae
5.	<i>Arengawightii</i> Griff.	Alzathengu	Indian sagopalm	Arecaceae
6.	<i>Artocarpous altilis</i> Fosberg.	Karichakkai	Breadfruit	Moraceae
7.	<i>Artocarpus heterophyllus</i> Lam.	Chakkapazham	Jack Fruit	Moraceae
8.	<i>Artocarpushirsutus</i> Lam.	Aynipazham	Wild Jack	Moraceae
9.	<i>Bambusa bambos</i> (L.) Voss.	Muzha	Giant thorny bamboo,	Poaceae
10.	<i>Caesalpinia mimosoides</i> Lam.	Appata	Pansi	Fabaceae
11.	<i>Cassia occidentalis</i> L.	Peyathuvarai	coffee senna	Fabaceae
12.	<i>Caryota urens</i> L.	Chazhai	solitary fishtail palm	Arecaceae
13.	<i>Capsicum annum</i> L.	Kantharimulagu	Chilli	Solanaceae
14.	<i>Carissa carandas</i> L.	Nullipazham	Karaunda	Apochynaceae
15.	<i>Ceropegia elegans</i> Wall.	Kammanamkizhangu	Elegans ceropegia	Apocynaceae
16.	<i>Cycas cricinalis</i> L.	Chazhankai	Sago palm	Cycadaceae
17.	<i>Coccina grandis</i> (L.) Voigt	Kovakkai	Ivy gourd	Cucurbitaceae
18.	<i>Costus pictus</i> L.	Sugar leaf	Yellow crepe ginger	Costaceae
19.	<i>Plectranthus amboinicus</i> L.	Navrapachallai	Indian borage	Lamiaceae
20.	<i>Colocasia esculenta</i> (L.) Schott	Neellapalli	Wild Taro	Araceae
21.	<i>Dioscorea oppositifolia</i> L.	Kavalakizhanku	Lesser yam	Dioscoriaceae
22.	<i>Dioscorea pentaphylla</i> Linn.	Noorakizhangu	Five Leaf Yam	Dioscoriaceae
23.	<i>Dioscorea wallichii</i> Hook.f.	Neduvankizhangu	Yam Dioscorea	Dioscoriaceae
24.	<i>Entada pursaetha</i> Dc.	Parandaikai	Sea Bean	Fabaceae

25.	<i>Ficus carica</i> L.	Vittipazham	Common fig, Anjeer	Moraceae
26.	<i>Garcinia gummi-gutta</i> (L.) Roxb.	Kodampuli	Cambodge Tree	Clusiaceae
27.	<i>Gloriosa superba</i> L.	Kalapaikzhengu	Chenkanthal	Liliaceae
28.	<i>Hemidismus indicus</i> (L.) R.Br.ex Schult	Narunattiveru	Indian Sarsaparilla	Apocyanaceae
29.	<i>Mangifera indica</i> L.	Mampazham	Mango	Anacardiaceae
30.	<i>Mimusops elengi</i> L.	Ellaenthi	Tanjong tree,	Sapotaceae
31.	<i>Murraya koenigii</i>	Karivabillai	Kari leaf	Rutaceae
32.	<i>Myristica fragrans</i> Houtt.	Jathikkai	Nutmeg	Myristicaceae
33.	<i>Manilkara kauki</i> (L.)Dubard	Elengi	Tanjong tree	Sapotaceae
34.	<i>Mucuna pruriens</i> (L)DC.	Koinkankai	Velvet Bean	Fabaceae
35.	<i>Occimum sanctum</i> L	Tulsi	Holy basil	Lamiaceae
36.	<i>Phyllanthus emblica</i> L	Nelli	Indian Gooseberry	Phyllanthaceae
37.	<i>Phyllanthus indofischeri</i> Bennet	Kattunelli	Emblic myrobalan	Phyllanthaceae
38.	<i>Piper nigrum</i> L.	Nallamilagu	Black Pepper,	Piperaceae
39.	<i>Piper betle</i> L.	Vettillai	Betel vine	Piperaceae
40.	<i>Passiflora foetida</i> L.	Kurangupazham	Love-in-a-mist	Passifloraceae
41.	<i>Schleichera oleosa</i> (Lour.) Oken	Poovanu	Ceylon Oak	Sapindaceae
42.	<i>Smilax zeylanica</i> L.	Theralli	Kumarika	Smilacaceae
43.	<i>Solanum trilobatum</i> L.	Thoothuvalai	Pea Eggplant	Solanaceae
44.	<i>Syzygium cumini</i> (L.) Skeels	Naval	Java Plum	Myrtaceae
45.	<i>Syzygium caryophyllatum</i> (L.) Alston	Karinijara	South Indian plum	Myrtaceae
46.	<i>Tamarindus indica</i> L.	Puzhi	Tamarind	Caesalpiniaceae
47.	<i>Terminalia catappa</i> L.	Vatham	Indian almond	Combretaceae
48.	<i>Ziziphus jujuba</i> Mill	Ilanthai	Indian Jujube	Rhamnaceae
49.	<i>Ziziphus rugosa</i> Lam	Thodalipazham	Wild Jujube	Rhamnaceae
50.	<i>Ziziphus nummularia</i> L.	Kattuillanthi	Wild Jujube	Rhamnaceae

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