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The wild edible plants and its contribution to the dietary equilibrium of tribe *Cholanaikkans* of Nilambur forest, Western Ghats of Kerala, India.

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Abstract

Nilambur forest is blessed with rich bio as well as ethnic diversity, it is situated in the Western Ghats region of Kerala. The *Cholanaikkans* are one of the primitive tribe in this forest. The ethnobotanical survey on *Cholanaikkans* was revealed that, they are using 40 wild plant species belonging to 25 families and 31 genera for edible purposes. It indicates that wild resources play an important role for maintaining dietary as well as health care equilibrium of tribe *Cholanaikkans* of Nilambur forest, Kerala

Key Words: Wild edibles, *Cholanaikkans*, Nilambur forest, Western Ghats, Kerala

Introduction

Man had depended on plants from time immemorial. The human life and culture has directly or indirectly been influenced by their surrounding environment. The primitive people are well acquainted with the properties and uses of plants of their surroundings (Nadanakunjidam, 2003; Binu Thomas and Rajendran, 2011). They have inherited rich traditional knowledge of surroundings plants used as food, fodder, fibers, woods, fuel, medicine, beverage, tannin, dye, gum, resin, cosmetics, crafts and religious ceremonies. Among them, the food plants which are either cultivated or grow wild, play an important role in sustaining human life for survival (Katewa, 2003; Bhattacharjya *et al*., 2006).

India holds rich genetic diversity in tropical root and tuber crops, particularly aroids, yams and several minor tuber crops and has a significant place in the dietary habits of small and marginal farm families and forest-dwelling communities during periods of food scarcity (Roy *et al*., 1988; Arora and Pandey, 1996). It has been estimated that 9000 of the 15,000 higher plants occurring in India are commercially useful. Of these 7500 are medicinal, 3900 are edible, 700 are culturally important, 525 are used for fiber, 400 are fodder, 300 for pesticides and insecticides, 300 for gum, resin and dye and 100 for incense and perfume (Anonymous, 1992-1993).

The primitive people depend on the forest resources for various purposes like fire wood, timber, non-timber forest products, medicines, food etc. (Pushpangadan, 1995). Millions of people in many developing countries do not have enough food to meet their daily requirements and many more are deficient in one or more micronutrients (FAO, 2004). In many cases rural communities depend on wild resources to meet their food needs in periods of food shortage. The diversity in wild species offers variety in the diet and contributes to household food security of tribe *Cholanaikkans* of Nilambur Forests, Kerala (Binu Thomas *et al*., 2010).

Materials and methods

Study area and tribe *Cholanaickkans*

The Kerala State is a homeland of a number of tribal communities. Among them, *Cholanaicken* (‘*Shola-naikkans*’) known as ‘the Cavemen of Kerala’. They form one of the four primitive tribes of Kerala and live in the upper Ghat section (*Chola*) of the Nilambur Valley, in the Western Ghats falling in Malappuram district (Bhanu, 1985; Binu Thomas *et al*., 2010). The study was conducted in Maanchery of Nilambur South forest division (11^0 17’ N 76^0 15’ E) in Malappuram district of Kerala State, India. The ethno botanical survey was conducted during 2011- 2012 and collected the existing wild edible plants which are used by tribe *Cholanaickkens* of Nilambur forest. The fresh plant specimens were

collected and were exhibited in front of the ethnic people to gather information. The plant materials were brought to the laboratory for identification. Plants were identified with help of available floras (Gamble, 1915-1936; Sivarajan and Matthew, 1997).

Result and Discussion

A detailed ethnobotanical study on tribe *Cholanaickkens* residing in Nilambur forest of Southern Western Ghats revealed that, they directly depend on many plants for their daily life. The present study documented that, they are using 40 wild plant species for edible purposes. These 40 species belonging to 25 families and 31genera. Among the 25 families of edible plants represented, Amaranthaceae is first dominant family with 5 species, followed by Dioscoreaceae with 4 species, Araceae, Cucurbitaceae, Passifloraceae with 3 species each.

They are using various parts of the plant like leaves, fruits, tubers, roots and rhizome, seeds. Among them, mostly the fruits are used (15 species) for edible purpose, followed by leaves (10 species), tubers (7 species), roots (4 species), seeds (2 species) and rhizomes (2 species) (Table-1).

Fig. A: Tribel old man of *Cholanaickkans*

Fig. B: Map of Kerala State

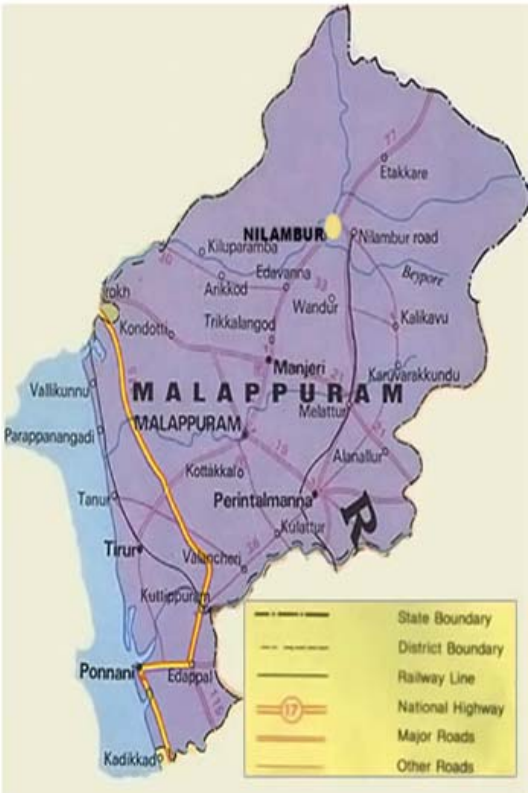
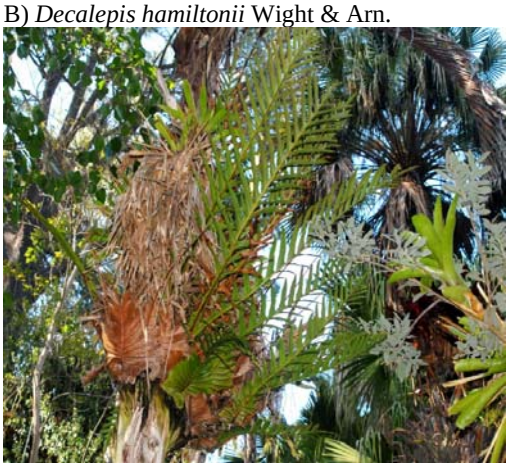


Fig.C: Map of Malappuram district with Nilambur

A) *Artocarpus hirsutus* Lam.

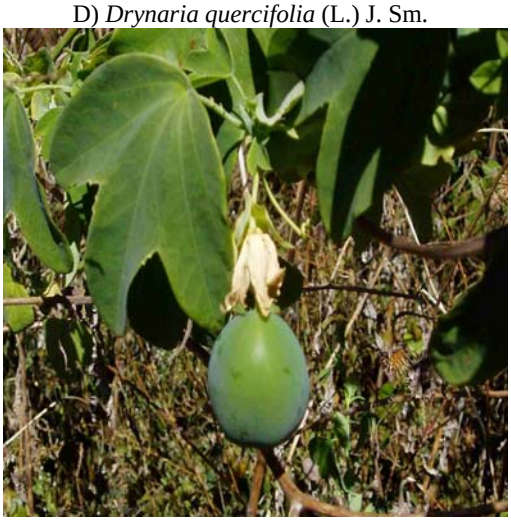
B) *Decalepis hamiltonii* Wight & Arn.

C) *Dioscorea oppositifolia* L.



D) *Drynaria quercifolia* (L.) J. Sm.

E) *Momordica dioica* Roxb.



F) *Passiflora subpeltata* Ortega.

Table -1: Wild Edible Plants used by *Cholanaickkens* of Nilambur Forest, Kerala

Sl.No	Name of the species	Family	Part(s) used	Uses
1.	*Alternanthera sessilis* (L.) DC.	Amaranthaceae	Leaves	Leafy vegetable
2.	*Amaranthus roxburghiana* Nevski	Amaranthaceae	Leaves	Leafy vegetable
3.	*Amaranthus spinosus* L.	Amaranthaceae	Leaves	Leafy vegetable
4.	*Amaranthus viridis* L.	Amaranthaceae	Leaves	Leafy vegetable
5.	*Amorphophallus paeonifolius* (Dennst.) Nicol.	Araceae	Tuber	Cooked as vegetable
6.	*Arisaema leshenaultii* Blume	Araceae	Tuber	Cooked as vegetable
7.	*Artocarpus heterophyllum* L.	Moraceae	Seeds	Edible
8.	*Artocarpus hirsutus* Lam.	Moraceae	Fruits	Fruit edible
9.	*Boerhavia diffusa* L.	Nyctaginaceae	Leaves	Leafy vegetable
10.	*Canthium parviflorum* Lam.	Rubiaceae	Fruit	Vegetable, Edible
11.	*Celosia argentea* L.	Amaranthaceae	Leaves	Leafy vegetable
12.	*Centella asiatica* L. Urban	Apiaceae.	Leaves	Leafy vegetable
13.	*Chlorophytum tuberosum* (Roxb.) Baker.	Liliaceae	Tuber	Cooked as vegetable
14.	*Colocasia esculenta* (L.) Schott.	Araceae.	Corms and Leaves	Cooked as vegetable
15.	*Cucurbita moschata* (Duch.) Poirt.	Cucurbitaceae	Fruit	vegetable
16.	*Decalepis hamiltonii* Wight & Arn.	Asclepiadaceae	Roots	Pickling
17.	*Dioscorea bulbifera* L.	Dioscoreaceae	Tuber	Cooked as food item
18.	*Dioscorea hispida* Dennst.	Dioscoreaceae	Tuber	Cooked as food item
19.	*Dioscorea oppositifolia* L.	Dioscoreaceae	Tuber	Cooked as food item
20.	*Dioscorea pentaphylla* L.	Dioscoreaceae	Tuber	Cooked as food item
21.	*Drynaria quercifolia* (L.) J. Sm.	Drynariaceae	Rhizome	Making Soup
22.	*Elaeocarpus serratus* L.	Elaeocarpaceae	Fruit	Pickling, Edible
23.	*Entada pursaetha* De.	Fabaceae	Seeds	Edible
24.	*Flacourtia montana* L.	Flacourtiaceae	Fruit	Pickling, Edible
25.	*Melothria hetrophylla* Lour.	Cucurbitaceae	Roots	Cooked as vegetable
26.	*Momordica dioica* Roxb.	Cucurbitaceae	Fruits	Cooked as vegetable
27.	*Passiflora edulis* Sims.	Passifloraceae	Fruit	Edible
28.	*Passiflora foetida* L.	Passifloraceae	Fruit	Edible
29.	*Passiflora subpeltata* Ortega.	Passifloraceae	Fruit	Edible
30.	*Phyllanthus embelica* L.	Euphorbiaceae	Fruits	Fruit edible and Pickling
31.	*Physalis minima* L.	Solanaceae	Leaves and Fruits	Leafy Vegetable, Fruit edible
32.	*Portulaca oleracea* L.	Portulacaceae	Leaves	Leafy vegetable
33.	*Pouzolzia zeylanica* (L.) Benn.	Urticaceae	Roots	Cooked as vegetable
34.	*Schleichera oleosa* (Lour.) Oken.	Sapindaceae	Fruit	Edible
35.	*Solanum nigrum* L.	Solanaceae	Leaves	Leafy vegetable
36.	*Syzygium cumini* (L.) Skeels.	Myrtaceae	Fruit	Edible

37.	*Toddalia asiatica* (L.) Lam.	Rutaceae	Fruit	Edible
38.	*Trianthema portulacastrum* L.	Aizoaceae.	Leaves	Leafy vegetable
39.	*Typhonium bulbiferum* Dalz.	Araceae	Rhizome	Used as vegetable
40.	*Ziziphus oenoplia* (L.) Miller.	Rhmnaceae.	Fruit	Edible

The leafy vegetables like *Amaranthus roxburghiana* Nevski., *A. spinosus* L., *A. viridis* L., tubers such as *Amorphophallus paeonifolius* (Dennst.) Nicol., *Dioscorea bulbifera* L., *D. hispida* Dennst., *D. oppositifolia* L., *D. pentaphylla* L. etc. The rhizome of pteridophytic species like *Drynaria quercifolia* (L.) J. Sm. is used for making specialized soup for their body health. The edible fruits obtained from the passiflora species like *Passiflora edulis* Sims., *P. foetida* L. and *P. subpeltata* Ortega. are very tastey.

Conclusion

This tribal people who were much gifted with the treasure of traditional knowledge. The present ethno botanical observation noticed that the tribe *Cholanaickkens* residing in Nilambur forest of Southern Western Ghats, Kerala are consuming 40 species of wild edible plants as food including leaves, fruits, roots, tubers, rhizomes, seeds etc. for maintaining their dietary equilibrium. The study was undertaken to document the various edible plants used by the *Cholanaickkens* and to record the presence of these plants in their vicinity.

Now a day's an increasing population demands more and more edible species of plants. There exist a limitation for the present day marketed fruits and their production. Hence, we have to find out alternative sources for nutrition. Majority of the wild edible fruits that are used by the tribals and rural villages are highly nutritive. The present observation also noticed that, the younger generation is ignorant about the vast resources available in their surroundings. The results of the study provides the evidence that, the wild edible plants continue to play an important role in the health care system of tribe *Cholanaickens* of the study area

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