



## Food plants of the *Cholanaikkan* and *Kattunaikkan* communities of Nilambur taluk, Malappuram District, Kerala, India

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### Abstract

Southern part of Western Ghats is rich source of hilly terrain, wide area of forest along with its varied wildlife habitats, waterfalls and rivers. Nilambur taluk located in Malappuram district is the part of northeast part of Kerala state, furthermore belongs to the Nilgiri range of the Western Ghats on the banks of the Chaliyar River. The ethnic diversity of the Malappuram district is remarkable as evidenced by number of tribal groups. Ethnobiological studies reported that the authentication, documentation of information and ethno-botanical exploration with respect to food value of wild edible plants and animals. Total 102 plants and plant part used by *Cholanaikkan* and *Kattunaikkan* tribes were enumerated from this area these are the normal food of the *Cholanaikkan* and *Kattunaikkan* tribes. Therefore, this study considered that the special attention required to them to maintain and improve this significant source of food supply.

**Keywords:** Ethnobotany, *Cholanaikkan*, *Kattunaikkan*, wild edible plants, Nilambur.

### Introduction

Biological resources and traditional knowledge have equal role in practice provides valuable information and analysis<sup>1</sup>. In 42 million Indian tribal population, 60 percent inhabited in forest and depend on forest source for food<sup>2,3</sup>. All forest dwellers, especially tribal people have a complex relationship between the ecosystems and themselves. They find out their daily needs from the forests as food, plant-based drugs for curing different ailments of themselves and their livestock<sup>4</sup>. The knowledge on these plants and interaction between them can be defined as Ethnobotany, a multidisciplinary science<sup>5</sup>. According to ethnobotany, the relationship between flora and human being is not limited to the use of medicine but also includes their use for food, ornaments, fishing, hunting, religious purpose, clothing and shelter. Majority of the wild edible plants used by the tribal communities are rich in essential nutrients, minerals and vitamins compare to cultivated plants<sup>6,7</sup>. Cultivated vegetables and fruits play a crucial role to meet the nutritional needs of the people in remote areas<sup>8,9</sup>. Knowledge of the tribal peoples on wild plants can be used to solve the problem of malnutrition<sup>10,11</sup> and utilization of wild plants has been a way of life for most of the rural populations throughout the world<sup>12,13</sup>. Knowledge of these food plants is usually transmitted by elders to young ones<sup>4,15,16</sup>.

Ethnic communities *Cholanaikkan* and *Kattunaikkan* depend on wild food plants and animal sources for their day-to-day life. Food plants inventions are the most significant decision during starvation for survival and thus makes important influence to the human nutrition throughout the year<sup>17</sup>. The scientific research

conducted inside the forests reported, forest as a natural habitat and richest source of the wild edible plants such as cereals, fruits, tubers and vegetables<sup>18</sup>.

In Southern part of India, Western Ghats zone marked as massive and hotspot for svarious wild edible species due to rich and varied soil, climate and continued and discontinued new life forms<sup>19</sup>. Tribal groups *Cholanaikkan* and *Kattunaikkan* inhabited in Nilambur Forest region of Malappuram District, Kerala, positioned close to the Nilgiris range of the Western Ghats on the banks of the Chaliyar River, has been selected for the present study. These tribal group use many wild edible plants as food. The present study connected with wild edible plants used by *Cholanaikkan* and *Kattunaikkan* tribe communities in Nilambur Forest region.

### Materials and methods

**Study area:** The study carried out in Nilambur Forests (between 11°26' and 11°9' N latitude and between 75°48' and 76°33' longitude) of Malappuram District, Kerala, India. Nilambur Forests had a small population of *Cholanaikkan* and *Kattunaikkan* tribe are entirely dependent on the forest areas for their day today life. Area forms the Eastern sector of Malappuram district in Kerala state near to the Nilgiri range of the Western Ghats rich in biodiversity and tribal population. It is surrounded by the undulating midlands on the West, Nilgiri on the East, Silent Valley National park of Palghat District on the South and Wayanad forests on the North<sup>20</sup>.

**Methodology:** Documentation of food plants has been conducted in the Nilambur forest areas with the help of

*Cholanaikkan* and *Kattunaikkan* tribes. The study was conducted during the year 2015-2019. The aim of this work was to explore, collect, identify and preserve the wild food plants used by *Cholanaikkan* and *Kattunaikkan* tribes in Nilambur forest region. Questionnaire survey conducted for the data collection from the tribal communities. Plants details and methods of usage were obtained from tribe people with regard each plant. Wild edible plant samples were collected and identified by using flora and also comparing with the herbarium specimens of Kongunadu Arts and Science College, Coimbatore.

## Results and discussion

During the study, it was observed that the tribal people face scarcity and the lack of food lead them to depend more on forest resources. *Cholanaikkan* and *Kattunaikkan* communities have very good knowledge about the wild plants in surrounding

forests and they knew- what plants are useful to eat and how to avoid harmful plants from edible plants.

A total of 102 plant species were enumerated from this area. Out of these, ninety-nine species belong to angiosperm, two species belong to pteridophytes and one plant belong to gymnosperms (Figure-1). During this survey, it is found that 36 species are used as fruits, 21 species yield tubers, 19 species used as leafy vegetable, 10 species, and seeds are used for various purposes, 7 species whole plant can be used. Few other species, in which stem, inflorescence, rhizome and root are used (Table-1 and Figure-2). In some species of plants, both leaves and stems are edible as in *Amaranthus spinosus*, *Caladium bicolor* and *Hedyotis corymbosa*. Fruit and seeds are edible in *Artocarpus heterophyllus*. Young shoot and seeds are edible in *Bambusa bambus* and *Dendrocalamus strictus*. Leaves, fruit and seeds are edible in *Coccinia grandis*, *Mukia maderaspatana*, *Hibiscus sabdariffa*, *Tamarindus indica* and *Oxalis corniculata*. Whole plant parts are edible in *Colocasia esculenta*.

**Table-1:** Edible plants used by the *Cholanaikkan* and *Kattunaikkan* tribes.

Scientific name	Family	Habit	Parts Used
<i>Acacia sinuata</i> (Lour)	<i>Mimosaceae</i>	Tree	Seed
<i>Aegle marmelos</i> (L.) Correa	<i>Rutaceae</i>	Tree	Fruits
<i>Aerva lanata</i> (L.) Juss. ex Schult.	<i>Amaranthaceae</i>	Herb	Leaves
<i>Alpinia calcarata</i> Roscoe	<i>Zingiberaceae</i>	Herb	Rhizome
<i>Alternanthera sessilis</i> (L.) R.Br	<i>Amaranthaceae</i>	Herb	Leaves
<i>Amaranthus spinosus</i> L.	<i>Amaranthaceae</i>	Herb	Leaves and stem
<i>Amaranthus viridis</i> L.	<i>Amaranthaceae</i>	Herb	Leaves
<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson	<i>Araceae</i>	Herb	Tuber
<i>Ampelocissus latifolia</i> (Roxb.) Planch.	<i>Vitaceae</i>	Climber	Fruit
<i>Ampelocissus indica</i> (L.) Planch.	<i>Vitaceae</i>	Climber	Fruit
<i>Angiopteris evecta</i> (G. Forst.) Hoffm.	<i>Marattiaceae</i>	Fern	Areal part
<i>Antidesma acidum</i> Retz.	<i>Phyllanthaceae</i>	Small tree	Fruit
<i>Artocarpus heterophyllus</i> Lam.	<i>Moraceae</i>	Tree	Fruit and Seeds
<i>Artocarpus hirsutus</i> Lam.	<i>Moraceae</i>	Tree	Fruit
<i>Asparagus racemosus</i> Willd.	<i>Asparagaceae</i>	Climber	Tuber
<i>Atalantia racemosa</i> Wt	<i>Rutaceae</i>	Tree	Fruit
<i>Baccaurea courtallensis</i> (Wight) Mull	<i>Phyllanthaceae</i>	Tree	Fruit

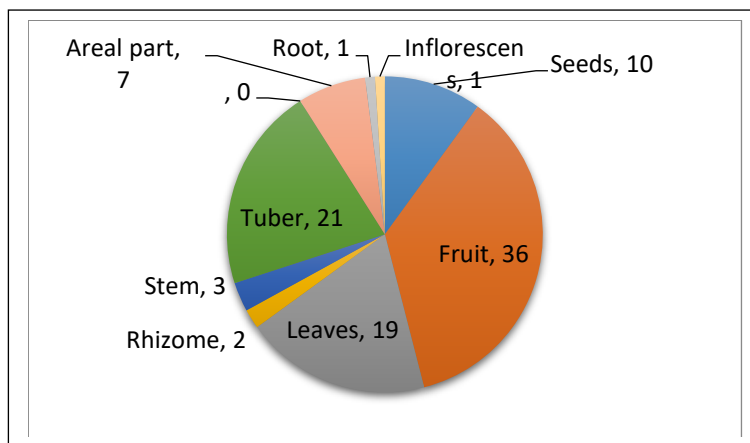
<i>Bambusa bambus</i> (Retz)	<i>Poaceae</i>	Shrub	Young shoot and seeds
<i>Boerhavia diffusa</i> L.	<i>Nyctaginaceae</i>	Herb	Areal part
<i>Borassus flabellifer</i> L.	<i>Areceaceae</i>	Tree	Fruit
<i>Caladium bicolor</i> (Aiton) Vent.	<i>Araceae</i>	Herb	Areal part
<i>Calamus rotang</i> L.	<i>Aracaceae</i>	Tree	Seeds
<i>Calycopteris floribunda</i> Lam.	<i>Combretaceae</i>	Shrub	Water inside the Stem
<i>Cardiospermum halicacabum</i> L.	<i>Sapindaceae</i>	Climber	Areal parts
<i>Carica papaya</i> L.	<i>Caricaceae</i>	Tree	Fruit
<i>Caryota urens</i> L.	<i>Areceaceae</i>	Tree	Inflorescence
<i>Centella asiatica</i> (L.) Urban	<i>Apiaceae</i>	Herb	Leaves
<i>Cheilocostus speciosus</i> (J. Konig) C. Specht	<i>Costaceae</i>	Herb	Tuber
<i>Cinnamomum verum</i> Presl	<i>Lauraceae</i>	Tree	Leaves
<i>Cissus discolor</i> Bi.	<i>Vitaceae</i>	Climber	Leaves
<i>Cissus quadrangularis</i> L.	<i>Vitaceae</i>	Climber	Stem
<i>Cleome viscosa</i> L.	<i>Cleomaceae</i>	Herb	Stem
<i>Coccinia grandis</i> (L.) Voigt	<i>Cucurbitaceae</i>	Climber	Leaves and fruit
<i>Colocasia esculenta</i> (L.) Schott	<i>Araceae</i>	Herb	Whole plant
<i>Commelina benghalensis</i> L.	<i>Commelinaceae</i>	Herb	Leaves
<i>Curculigo orchiooides</i> Gaertn	<i>Hypoxidaceae</i>	Herb	Tuber
<i>Curcuma longa</i> L.	<i>Zingiberaceae</i>	Herb	Tuber
<i>Curcuma neilgherrensis</i> Wight	<i>Zingiberaceae</i>	Herb	Tuber
<i>Cycas circinalis</i> L.	<i>Cycadaceae.</i>	Gymnosperms	Seeds
<i>Cyperus rotundus</i> L.	<i>Cyperaceae</i>	Herb	Tuber
<i>Dendrocalamus strictus</i> (Roxb.)	<i>Poaceae</i>	Shrub	Seeds and Young shoot
<i>Dioscorea alata</i> L.	<i>Dioscoreaceae</i>	Climber	Tuber
<i>Dioscorea belophylla</i> Voigt.	<i>Dioscoreaceae</i>	Climber	Tuber
<i>Dioscorea composita</i> Hemsl	<i>Dioscoreaceae</i>	Climber	Tuber
<i>Dioscorea esculenta</i> (Lour.) Burkill var. <i>fasciculata</i>	<i>Dioscoreaceae</i>	Climber	Tuber
<i>Dioscorea esculenta</i> (Lour.) Burkill	<i>Dioscoreaceae</i>	Climber	Tuber

<i>Dioscorea floribunda</i> Martens & Galeotti	<i>Dioscoreaceae</i>	Climber	Tuber
<i>Dioscorea hispida</i> Dennst.	<i>Dioscoreaceae</i>	Climber	Tuber
<i>Dioscorea oppositifolia</i> L.	<i>Dioscoreaceae</i>	Climber	Tuber
<i>Dioscorea pentaphylla</i> L.	<i>Dioscoreaceae</i>	Climber	Tuber
<i>Dioscorea rotundata</i> Poir.	<i>Dioscoreaceae</i>	Climber	Tuber
<i>Baccaurea courtallensis</i> (Wight) Mull. Arg.	<i>Phyllanthaceae</i>	Tree	Fruit
<i>Diplazium esculentum</i> (Retz.) Sw.	<i>Athyriaceae</i>	Fern	Areal parts
<i>Ensete superba</i> (Roxb) Chees.	<i>Musaceae</i>	Tree	Seeds
<i>Entada rheedii</i> Spreng	<i>Fabaceae</i>	Climber	Seeds
<i>Erythrina variegata</i> L.	<i>Fabaceae</i>	Tree	Leaves
<i>Euphorbia hirta</i> L.	<i>Euphorbiaceae</i>	Herb	Leaves
<i>Ficus racemosa</i> L.	<i>Moraceae</i>	Tree	Fruit
<i>Garcinia gummi-gutta</i> (L.) Roxb.	<i>Clusiaceae</i>	Tree	Fruit
<i>Grewia tilifolia</i> Vahl.	<i>Tiliaceae</i>	Tree	Fruit
<i>Hedyotis corymbosa</i> (L.)	<i>Rubiaceae</i>	Herb	Areal part
<i>Hemidesmus indicus</i> (L.) R.Br.	<i>Asclepiadaceae</i>	Herb	Root
<i>Hibiscus sabdariffa</i> L.	<i>Malvaceae</i>	Shrub	Leaves and fruit
<i>Hibiscus surattensis</i> L.	<i>Malvaceae</i>	Climber	Fruit
<i>Ipomoea mauritiana</i> Jacq.	<i>Convolvulaceae</i>	Climber	Tuber
<i>Ixora brachiata</i> Roxb	<i>Rubiaceae</i>	Herb	Fruit
<i>Kaempferia rotunda</i> L.	<i>Zingiberaceae</i>	Herb	Rhizome
<i>Lantana camara</i> L.	<i>Verbenaceae</i>	Shrub	Fruit
<i>Mangifera indica</i> Linn.	<i>Anacardiaceae</i>	Tree	Fruit
<i>Maranta arundinacea</i> Linn.	<i>Maranthaceae</i>	Herb	Tuber
<i>Mimusops elengi</i> L.	<i>Sapotaceae</i>	Tree	Fruit
<i>Mollugo pentaphylla</i> L.	<i>Molluginaceae</i>	Herb	Leaves
<i>Mukia maderaspatana</i> (L.) Roem.	<i>Cucurbitaceae</i>	Climber	Leaves and fruit
<i>Oxalis corniculata</i> L.	<i>Oxalidaceae</i>	Climber	Leaves and Fruit
<i>Passiflora foetida</i> L.	<i>Passifloraceae</i>	Climber	Fruit

<i>Phyllanthus emblica</i> L.	<i>Phyllanthaceae</i>	Tree	Fruit
<i>Physalis angulata</i> L.	<i>Solanaceae</i>	Herb	Fruit
<i>Piper longum</i> L.	<i>Piperaceae</i>	Climber	Fruit
<i>Piper nigrum</i> L.	<i>Piperaceae</i>	Climber	Fruit
<i>Polygonum chinense</i> L.	<i>Polygonaceae</i>	Herb	Leaves
<i>Pouzolzia zeylanica</i> (L.) Benn. & R. Br	<i>Urticaceae</i>	Herb	Leaves
<i>Pterolobium hexapetalum</i> (Roth) Sant. & Wagh	<i>Caesalpinaceae</i>	Tree	Leaves
<i>Sarcostigma kleinii</i> Wight & Arn.	<i>Icacinaceae</i>	Climber	Fruit
<i>Schleichera oleosa</i> (Lour.) Merr	<i>Sapindaceae</i>	Tree	Fruit
<i>Senna obtusifolia</i> (L.)	<i>Fabaceae</i>	Herb	Leaves
<i>Smilax zeylanica</i> L.	<i>Smilacaceae</i>	Climber	Fruit
<i>Solanum anguivi</i> Lam.	<i>Solanaceae</i>	Shrub	Fruit
<i>Solanum torvum</i> Sw.	<i>Solanaceae</i>	Shrub	Fruit
<i>Spondias indica</i> (Wight & Arn.) Airy Shaw & Forman	<i>Anacardiaceae</i>	Small tree	Fruit
<i>Spondias pinnata</i> (L.)	<i>Anacardiaceae</i>	Tree	Fruit
<i>Sterculia guttata</i> Roxb.	<i>Malvaceae</i>	Tree	Seeds
<i>Sterculia urens</i> Roxb	<i>Malvaceae</i>	Tree	Seeds
<i>Syzygium cumini</i> (L.)	<i>Myrtaceae</i>	Tree	Fruit
<i>Tamarindus indica</i> L.	<i>Caesalpineaceae</i>	Tree	Fruit and younger leaves
<i>Terminalia bellirica</i> (Gaertn.)Roxb.	<i>Combretaceae</i>	Tree	Fruit
<i>Tragia involucrata</i> L.	<i>Euphorbiaceae</i>	Herb	Leaves
<i>Trichosanthes cucumerina</i> L.	<i>Cucurbitaceae</i>	Climber	Fruit
<i>Trichosanthes cuspidata</i> Lam.	<i>Cucurbitaceae</i>	Climber	Fruit
<i>Trichosanthes lobata</i> Roxb.	<i>Cucurbitaceae</i>	Climber	Fruit
<i>Xylia xylocarpa</i> Roxb. Taub.	<i>Fabaceae</i>	Tree	Seed
<i>Zanthoxylum limonella</i> . Alston	<i>Rutaceae</i>	Tree	Seeds
<i>Ziziphus incurva</i> Roxb	<i>Rhamnaceae</i>	Tree	Fruit
<i>Ziziphus rugosa</i> Lam.	<i>Rhamnaceae</i>	Tree	Fruit



**Figure-1:** A: *Ampelocissus indica* (L.) Planch, B: *Caladium bicolor* (Aiton) Vent, C: *Ampelocissus latifolia* (Roxb.), D: *Spondias indica* (Wight & Arn.) Airy Shaw & Forman, E: *Ziziphus incurva* Roxb, F: *Dioscorea* sp, G: *Trichosanthus lobata* Roxb, H: *Cissus discolor* Bi, I: *Antidesma acidum* Retz, J: *Calycopteris floribunda* Lam, K: *Ipomoea mauritiana* Jacq., L: *Diplazium esculentum*(Retz.) , M: Seeds of *Cycas circinalis* L.



**Figure-2:** Plants parts used as edible.

## Conclusion

In recent years, there have been inquiries related to the management of lesser known wild and semi domestic species, which exhibit different characteristic as compares with the unmanaged species. This study confirmed the position of wild fruit species as a source of nutrients for *Cholanaikkan* and *Kattunaikkan*. Wild edible plants food value is much more than domesticated edible plants. Therefore, the knowledge about the food plants need to be explored, identified collected, and conserve these resources which is used by *Cholanaikkan* and *Kattunaikkan* tribes in Nilambur forest region, Malappuram District, Kerala, India.

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