

Full Length Research Paper

## Wild edible fruits used by Badagas of Nilgiri District, Western Ghats, Tamilnadu, India

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Nilgiri means "Blue Mountains". The entire area of the Blue Mountains constitutes the present district of Nilgiri. It was originally a tribal land and was occupied by the Todas, Kotas, Kurumbas, Kattunayakkas and Panyas. Among them, the Badagas are one of the major communities in the district who reside in the mountain as long as other tribal population. The weather in this district favours the growth of wild edible fruit crops. There are many edible fruits existing naturally in forest as well as in cultivable areas. These fruit plants are playing vital role in providing nutritional and economic values in the rural areas. This paper lists 30 wild edible fruits used by the Badagas of Nilgiri District for their conservation and cultivation purpose. But the commercial importance and the market value of these wild fruits is unknown to them. Hence this study is being taken to conserve those wild edible fruits and cultivate in large scale, to uplift their economic status in near future.

**Key words:** Badagas, wild edible fruits, conservation, Nilgiris.

### INTRODUCTION

India is one of the twelve mega diversity in the world. The Nilgiris falls within the Western Ghats and is considered to be a home of more than 3500 species of wild plants. The forest of the Nilgiris provide a large number of plants whose fruits, seeds, tubers, shoots etc. make an important contribution to the diet of the people, particularly those living near forest and other rural areas. These plants not only provide inexpensive food but several other useful products like medicine, fiber, fodder, dyes, etc. Historically, fruits and vegetables have been used as medicinal agents. Wild fruits contain a significant level of biological active components that fruits are rich source of vitamins, minerals and other nutrients, but in contrast, wild fruits are often viewed with distrust. With the use of wild fruits not known, these people destroy the wild crop field for cultivation purpose.

Recent phytochemical investigations in fruits have attracted a great deal of attention, with mainly concentrations on their role in preventing diseases caused as a

result of malnutrition. Though there are many wild fruits in this region, there is no proper collection, improvement and agro-techniques for these crops. Hence much emphasis should be given to exploration and collection, *in situ* or *ex situ* conservation, studying nutritional and anti-nutritional properties, product development and marketing (Sankaran et al., 2006).

The fruits are nature's gift to mankind. These wild fruits are chief source of vitamins, minerals and proteins. These constituents are essential for normal physiological well being and help in maintaining healthy state through development of resistant against pathogens (Bal, 1997). Rathod and Valvi (2011) studied the antinutritional factors of some wild edible fruits from Kolhapur district. Cyril et al. (1993) reported less known edible fruit-yielding plants of Nilgiris. It is known that the intake of wild crop reduces the rate of diseases and increases the rate of resistance and ageing. Fruit plants are playing a vital role in providing nutritional and economical security to the poor

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Figure 1. Map of study area.

mass in rural areas but the commercial importance and market value of these wild fruits is unknown to them. Hence the present study was made to list out identification of underutilized wild edible fruits used by the indigenous community of Badagas from Nilgiri hills, and to conserve those plants for their future generations.

### Study area

The Nilgiris of Blue Mountains are some of the most picturesque mountain ranges situated mainly in the Northwestern corner of Tamilnadu in South India. They are surrounded in the North by the state of Karnataka and West and Southwest by Kerala and lie between  $11^{\circ} 12'$  to  $11^{\circ} 43'$  and  $76^{\circ} 14'$  to  $77^{\circ} 11'$  E, and are meeting ground (or) nexus of three mountain systems of Peninsular India, Western Ghats, Southern Ghats and Eastern Ghats. The Nilgiris comprise the second highest peak in India situated in the South of Himalayas. Udagamandalam (Ootacamund), the most popular hill station in southern India, is situated in a broad undulating valley at the foot of Doddabetta (Figure 1).

### Anthropology of Badagas

The name Badagas (corrupted to 'burgher' by the early European visitors to the hills) is similar to the word vadaga that means 'Northern', and the Badaga of the plateau are the descendants of canaries who immigrated to Karnataka. Unlike the tribes like Todas, Kotas and

Kurumbas whose number never exceeded about a thousand, the Badagas are the largest social group in the Nilgiris, the present population of badagas is estimated at 1,50,000, spreading over 370 hamlets ([www.badaga.org](http://www.badaga.org)). The Badagas basically were included under the list of scheduled tribes till the 1971 census. After that, they were included under backward community list, making them eligible to avail 27% reservation in both central and state government jobs ([www.badaga.org](http://www.badaga.org)).

The badaga are split into a six-sub division: Wodeya, Haruva, Athikari, Kanakka, Badaga and Toreya. The first two sub divisions and several in the third sub division are purely vegetarian and are Lingayats and others are Saivites.

### MATERIALS AND METHODS

The present work is the outcome of intensive field studies undertaken in hamlet inhabited by Badaga community. Explorative field trips were regularly made once in a month of the year to all habitations to elicit information on medicinal plants used to treat various ailments. All the medicinal important plants were collected as per the information given by the informants. The plant specimens collected were identified with the help of Flora of Presidency of Madras (Gamble and Fischer, 1915), Flora of Nilgiri and Pulney Hills (Fyson, 1915) and Flora of South Indian Hill Station (Fyson, 1977), and confirmed with the authentic herbarium of Government of India, Botanical survey of India, Southern circle, Coimbatore and survey of medicinal plant collection unit, Government Arts College campus, Ootacamund. Field numbers were given for all the collected plant specimens. Herbarium specimens were prepared according to the method of Jain and Rao (1977). All the prepared herbarium specimens were deposited in the Department of Botany, Bharathiar University, Coimbatore.

**Table 1.** List of wild edible fruits used by Badagas of Nilgiris.

S/No	Plant name	Family	Local name	Therapeutic uses	Habit
1	<i>Annona reticulata</i>	Annonaceae	Seetha annu	Diarrhoea, Edible	Tree
2	<i>Berberis tinctoria</i>	Berberidaceae	Jakkal annu	Jaundice, Stomachache, tooth ache	Erect shrub
3	<i>Carissa paucinervia</i>	Apocynaceae	Kavill annu	Quenching thirst	Spinous shrub
4	<i>Cyphomandra betacea</i>	Solanaceae	Thambitai	Rich in Vitamins	Tree
5	<i>Elaeagnus kologa</i>	Elaeagnaceae	Kolanganannu	Heart pain, fever	Straggling shrub
6	<i>Elaeocarpus tectorius</i>	Elaeocarpaceae	Bikkannu	Skin allergy	Tree
7	<i>Ficus carica</i>	Moraceae	Seeme atti	Chest pain, epilepsy, asthma	Tree
8	<i>Ficus racemosa</i>	Moraceae	Athi annu	Anti-diuretic	Small tree
9	<i>Ficus exasperata</i>	Moraceae	Maramthinai athi	Fertility	Small tree
10	<i>Fragaria nilgherrensis</i>	Rosaceae	kadannu	Edible	-
11	<i>Morus alba</i>	Moraceae	Kambilipoochi	Purify blood, treat constipation and diabetes	Climber
12	<i>Oxalis latifolia</i>	Oxalidaceae	Ullamajige	Paralysis	Bulbous herb
13	<i>Passiflora edulis</i>	Passifloraceae	Odey annu	Head ache	Climbing shrub
14	<i>Physalis minima</i>	Solanaceae	Kotharannu	Intestinal pain	Herb
15	<i>Physalis peruviana</i>	Solanaceae	Pitlannu	Vomiting	Herb
16	<i>Polygonum chinensis</i>	Polygonaceae	Kappu annu	Paralysis, thirst	Sub herb
17	<i>Psidium guajava</i>	Myrtaceae	Koyya annu	Diarrhea	Tree
18	<i>Rhodomyrtis tomentosa</i>	Myrtaceae	Thavutte annu	Dental diseases	Shrub
19	<i>Rubus ellipticus</i>	Rosaceae	Thuppa mulli	Easy digestion, paralysis	Shrub
20	<i>Rubus molucanus</i>	Rosaceae	Mulli annu	Easy digestion, paralysis	Shrub
21	<i>Rubus racemosus</i>	Rosaceae	yemmemulli	Easy digestion, paralysis	Shrub
22	<i>Solanum nigrum</i>	Solanaceae	Gakaiannu	Diabetes, tuberculosis, diarrhea and skin diseases	Herb
23	<i>Solanum sismbrifolium</i>	Solanaceae	Thomba annu	Antifertility, vermifuge	Shrub
24	<i>Syzygium arnottianum</i>	Myrtaceae	Nerli annu	Toothache	Tree
25	<i>Syzygium calophyllifolium</i>	Myrtaceae	Kadu nerli	Toothache	Tree
26	<i>Syzygium cumini</i>	Myrtaceae	Nerli annu	Toothache	Tree
27	<i>Taxillus buceatus</i>	Loranthaceae	Gannaiannu	Skin allergy	Parasitic herb
28	<i>Todalia asiatica</i>	Rutaceae	Massikai	Skin allergy	Shrub
29	<i>Zizyphus rugosa</i>	Rhamnaceae	Anthonannu	Monorrhigia, diarrhoea	Shrub
30	<i>Celtis cinnamomea</i>	Ulmaceae	Adhuvu annu	Cuts and wounds	Tree

\*Annu denotes fruit.

## RESULTS AND DISCUSSION

In this present study, 30 wild edible fruits eaten by Badagas have been recorded and tabulated according to their plant name(s), family, local name, therapeutic uses and habits (Table 1), in which Solanaceae, Myrtaceae and Rosaceae each of 5 species and Moraceae 4 and the rest are represented with one or two species. The study indicates the extensive use of wild edible fruits by Badagas in Nilgiri hills of Western Ghats, Tamilnadu. Some of the wild edible plants are used for medicinal as well as some religious purpose. *Elaeagnus kologa* leaves are kept in front of the house to protect it from evil spirits and *Elaeocarpus tectorius* is served as sacred trees of

Badagas, Todas, Kotas and Krumbas. *Rhodomyrtis tomentosa* stem and *Rubus ellipticus* leaves are used in important festivals like Oppu when they pay homage to cows which serve all their needs while *Rubus molucanus* leaves are for when they offer the agricultural produce to God. *Syzygium cumini* tree is used in all religious purpose for all tribes of Nilgiris.

Traditional and indigenous medical knowledge of plants, both oral and codified, are undoubtedly eroding (Mujtaba and Khan, 2007). There is a huge genetic diversity which can be used for creating the gene bank (field and *in vivo*), and the collection, conservation and utilization of these crops and standardization of agro-techniques is essential for their profitable cultivation and



**Figure 2.** (a) Vegetational slopes in Nilgiris, (b) author with Badagas, (c) author collecting information about both medicinal plants and Badagas anthropology, (d) *Carissa paucinervia* A.DC., (e) *Eleagnus kologa* Schult., (f) *Psidium duajava* Linn., (g) *Solanum sismbrifolium* Linn.

maximum yield realization in these crops (Sankaran et al., 2006) (Figure 2).

### Conclusion

The Nilgiri hill is fast growing for eco-tourism and other economical purpose, and this threatened their knowledge. This is indicative of the vast repository of knowledge of plants that is still available for global use, provided of course that it does not get lost before it can be tapped or documented. In the present scenario, traditional knowledge system in our country is fast eroding and there is an urgent need to inventories, record all ethno-botanical and cultural information among the

diverse ethnic communities before the traditional cultures are completely lost. Therefore, documentation of information will help in conserving the knowledge. A comprehensive database of the plants used for various purposes could be saved for the forthcoming generations. In such cases, laboratory investigations and clinical trials are suggested to validate the therapeutic properties of these wild edible fruits for effective and safe use.

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