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# Ethnobotanical Studies on Wild Nutraceuticals of Dapoli Tehsil of Ratnagiri District (M.S.) India.

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## Introduction:

While working on sacred groves of Dapoli tehsil, it was observed that the villagers and tribal people are using wild plants as supplementary food. Also in the market of Dapoli, many tribal people brought various wild fruits, vegetables, tubers, etc. for the sale. The correct botanical identification of such wild edible plants along with systematic and detailed documentation of such traditional knowledge is important for Agronomical, Phytochemical, Taxonomical, Genetical, Pharmacognosy and Pharmacological research. So the topic entitled "Ethnobotanical Studies on Wild Nutraceuticals of Dapoli Tehsil of Ratnagiri District (M.S.) India." was undertaken for present study.

Dapoli tehsil is totally hilly area, situated along the coast of Arabian Sea. Dapoli lies between 17°4-54" North latitude and 73°10-39" East longitude and 250 mts. altitude. Being very hilly and rugged, they are mostly covered by forests. Most of the forestland includes private forests and sacred groves.

The villages and hamlets are situated far away in the remote, inaccessible areas of the Dapoli tehsil. Cultivable land is so scarce that agriculture produce is mostly grains and some types of fruits. No vegetable crops are grown in the fields. Especially in rainy season the people from study area are consuming wild fruits, vegetables, tubers etc. as supplementary food.

Many wild plants species are used for edible purposes from ancient times by tribals and other people inhabiting forest areas. There are some early references about wild plants used as food by the tribal communities from different areas. John Graham (1839) was the first modern botanist who recorded 14 edible species from Western Ghat area. Nairne (1894), Talbot (1909-1911), Santapau (1953), Vartak (1959), Kumbhojkar and Vartak (1983), Vartak and Gadgil (1980).

Vartak (1981) reported 120 edible species; Kumbhojkar and Vartak (1988) stated the importance of family Vitaceae; Mohanty (2010) reported 38 less known

wild edible species from the forest localities of Dhenkanal district of Odisha, Saikia *et al.* (2010) reported 27 wild and cultivated edible plant species whose flowers are used as food from Assam and Arunachal Pradesh; Shad *et al.* (2013) documented 17 wild edible plant species from Pakistan.

The review of literature indicates that, there are many research papers published on wild edible plants in our country as well as abroad. But similar work in Konkan zone is very scanty.

## Methodology:

Ethnobotanical exploration of wild nutraceuticals available in sacred groves and in forests of Dapoli tehsil was undertaken during 2008 to 2012. Frequent field surveys to sacred groves of Sadavli, Pachavli, Bodivali and Kudavale and other many villages were conducted. Also seasonal visits to Dapoli market were conducted. At the same time, information regarding wild edible plants was gathered by interviews with local elder villagers and tribal people on the spot.

The informers were taken individually to the sites of wild edible plants and at the same time photography with Digital Camera was done. The wild edible plant materials in flowering or fruiting stage were collected for correct botanical identification. Further, specimens were identified with the help of available literatures (Cook, 1958; Sharma *et al.*, 1996; Singh and Karthikeyan, 2000 and Singh *et al.*, 2001).

The list of all reported wild nutraceutical plants were prepared in alphabetical order along with their botanical name followed by family, local name/s and plant part/s used by local people and tribal are given in table-1.

## Enumeration

Total 84 wild edible plant species used by local people and tribal people are listed and presented in alphabetical order along with their botanical name followed by family, local name/s and plant part/s used.

**Table 1: Wild edible plants of study area.**

Sr. No.	Botanical name of plant	Family	Local name	Edible plant part/s used
	<i>Abrus precatorius</i> L.	Fabaceae	Gunj	Leaves are eaten in Pan masala

2.	<i>Achyranthes aspera</i> L. Var. <i>aspera</i>	Amaranthaceae	Aghada	Leaves are used as vegetable
3.	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Bael	Ripe fruits are eaten
4.	<i>Amaranthus viridis</i> L.	Amaranthaceae	Math	Leaves are used as vegetable
5.	<i>Amorphophallus campanulatus</i> Blume	Araceae	Suran	Tuber is used as vegetable
6.	<i>Ampelocissus latifolia</i> (Roxb.) Planch.	Vitaceae	Nadena	Ripe fruits are eaten
7.	<i>Anacardium occidentale</i> L.	Anacardiaceae	Kaaju	Roasted seed kernels and Ripe thalamus is eaten
8.	<i>Artocarpus heterophyllus</i> Lam.	Moraceae	Phanas	Ripe and unripe fruits
9.	<i>Artocarpus incisus</i> L.	Moraceae	KapaPhanas	Ripe fruits, unripe fruits and seeds
10.	<i>Asparagus racemosus</i> Willd. var. <i>racemosus</i>	Liliaceae	Satavari	Tubers are eaten as tonic
11.	<i>Bambusa arundinacea</i> (Retz.) Willd	Poaceae	Bamboo, Kalak	Very young shoot and rhizome is used as vegetables
12.	<i>Benincasa hispida</i> (Thunb.) Cogn.	Cucurbitaceae	Kohala	Fruits are uses as vegetables
13.	<i>Bridelia hamiltoniana</i> Wall. exMuell.	Euphorbiaceae	-	Ripe fruits are eaten
14.	<i>Bridelia retusa</i> (L.) Spreng.	Euphorbiaceae	Asana	Ripe fruits are eaten
15.	<i>Capparis moonii</i> Wight	Capparaceae	Wagati	Ripe fruits are eaten
16.	<i>Carissa congesta</i> Wight var. <i>congesta</i>	Apocynaceae	Karvand	Ripe fruits are eaten and unripe fruits are used for manufacturing of pickles.
17.	<i>Cassia mimosoides</i> Linn.	Caesalpinaceae	Chinchani	Mature fruits are eaten
18.	<i>Cassia tora</i> L.	Caesalpinaceae	Takla	Young leaves and pods are used as vegetables
19.	<i>Celosia argentea</i> L.	Amaranthaceae	Kurdu	Young leaves are used as vegetable
20.	<i>Centella asiatica</i> (L.) Urban	Apiaceae	Brahmi	Fresh leaves are eaten as brain tonic
21.	<i>Chlorophytum breviscapum</i> Dalz.	Liliaceae	Phodshi, Kula	Fresh young leaves are used as vegetables and tubers are eaten as tonic
22.	<i>Chlorophytum tuberosum</i> (Roxb.) Baker	Liliaceae	Phodshi	Fresh young leaves are used as vegetables and tubers are eaten as tonic
23.	<i>Clerodendrum serratum</i> (L.) Moon.	Verbenaceae	Bharang	Leaves and tender shoots are used as vegetables
24.	<i>Colocasia esculenta</i> (L.) Schott and Endl.	Araceae	Alu	Petiole and leaves are use as vegetables
25.	<i>Cordia myxa</i> Linn.	Boraginaceae	Bhokar	Ripe fruits are eaten
26.	<i>Curcuma amada</i> Roxb.	Zingiberaceae	Ran halad	Rhizome is used in pickles
27.	<i>Curcuma pseudomontana</i> Grah.	Zingiberaceae	Ran-haldi	Rhizome is used in curry
28.	<i>Dendrophthoe falcata</i> (L. F.) Etting var. <i>falcata</i>	Loranthaceae	Bandgul	Ripe fruits are eaten
29.	<i>Dillenia pentagyna</i> Roxb.	Dilleniaceae	Karmal	Ripe fruits are eaten
30.	<i>Dioscorea bulbifera</i> L.	Dioscoreaceae	Karanda	Bulbils and root tubers eaten
31.	<i>Dioscorea pentaphylla</i> Linn. <i>Embelia basal</i> (R. & S.) A. DC.	Dioscoreaceae	Shendvel	Tubers are edible
32.	<i>Emblia officinalis</i> Fruct	Myrsinaceae	Ambati/ Vawding	Ripe fruits are eaten
33.	<i>Ensete superbum</i> (Roxb.) Cheesm.	Euphorbiaceae	Avala	Fruits are eaten
34.	<i>Eugenia jambolana</i> Lamk.	Musaceae	Rankel/ Chavai	Ripe fruits are eaten
35.	<i>Ficus glomerata</i> Roxb.	Myrtaceae	Jambhul	Ripe fruits are eaten
36.	<i>Ficus racemosa</i> L.	Moraceae	Umbar	Ripe fruits are eaten
37.	<i>Flacourtia Montana</i> Grah.	Moraceae	Umbar	Ripe fruits are eaten
		Flacourtiaceae	Attak	Ripe fruits are eaten

38	<i>Garcinia indica</i> (Du Petit-Thou.) Choisy	Clusiaceae	Amsol, Kokum, Ratamba	Ripe fruits are eaten and various fruit products are prepared
40	<i>Gnetum ula</i> Linn.			
41	<i>Goniocaulon glabrum</i> Cass.	Gnetaceae	Gaidhad	Seeds are eaten
42	<i>Grewia asiatica</i> L.	Asteraceae	Dhanga	Tender shoots and leaves are used as vegetables.
43	<i>Grewia tillifolia</i> Vahl	Tiliaceae	Phalsi.	Ripe fruits are eaten
44	<i>Habenaria grandifloriformis</i> Blatt. & McC.	Tiliaceae	Dhaman	Ripe fruits are eaten
45	<i>Hibiscus cannabinus</i> L.	Orchidaceae	Chickurkanad a/ Pendra	Flowers are used as vegetable.
46	<i>Hibiscus sabdariffa</i> L.	Malvaceae	Ambadi	Young leaves are used as vegetable
47	<i>Holarrhena pubescens</i> (Buch.-Ham.) Wall.	Malvaceae	Tambdi- Ambadi	Young leaves are used as vegetable
49	<i>Holostemma annulare</i> (Roxb.) K. Schum.	Apocynaceae	Kuda, Pandharakuda	Young pods & flowers are used as vegetable
51	<i>Ipomoea aquatica</i> Forsk.	Asclepiadaceae	Shildodi	Flowers are eaten
52	<i>Ixora brachiata</i> Roxb.	Convolvulaceae	Nalichi Bhaji	Young leaves are used as vegetables
53	<i>Ixora coccinea</i> L.	Rubiaceae	Lokhandi	Ripe fruits are eaten
54	<i>Lantana camara</i> L.	Rubiaceae	Devara	Ripe fruits are eaten
55	<i>Leea indica</i> (Burn. F.) Merr.	Verbinaceae	Ghaneri	Ripe fruits are eaten
56	<i>Maesa indica</i> (Roxb.) A. DC.	Leeaceae	Dinda	Young leaves used as vegetables
57	<i>Mammea suriga</i> (Buch-Ham. Ex Roxb.) Kosterm.	Myrsinaceae	Atki	Ripe fruits are eaten
58	<i>Mangifera indica</i> L.	Clusiaceae	Surangi	Ripe fruits are eaten
59	<i>Manilkara hexandra</i> (Roxb.) Dub.	Anacardiaceae	Amba	Fruit and endosperm are eaten
60	<i>Memecylon umbellatum</i> Burm. Var. <i>umbellatum</i>	Sapotaceae	Khirmi	Ripe fruits are eaten
61	<i>Meyna laxiflora</i> Robyns	Melastomataceae	Anjan / Ajani	Ripe fruits are eaten
62	<i>Mimusops elengi</i> L.	Rubiaceae	Alu	Ripe fruits are eaten
63	<i>Momordica dioica</i> Roxb.	Sapotaceae	Bakul	Ripe fruits are eaten
66	<i>Opuntia elatior</i> Mill.	Cucurbitaceae	Kartoli, Kartoll	Fruits are used a vegetables
67	<i>Oxalis corniculata</i> L.	Cactaceae	Nivdung	Ripe fruits are eaten
68	<i>Portulaca oleracea</i> L.	Oxalidaceae	Ambusi	Leaves are used as vegetables
70	<i>Schleichera oleosa</i> (Lour.) Oken	Portulacaceae	Ghol	Young shoots are used as vegetables
71	<i>Semecarpus anacardium</i> L. Var. <i>anacardium</i>	Sapindaceae	Koshimb, Kusum	Ripe fruits are eaten
72	<i>Smilax ovalifolia</i> Roxb.	Anacardiaceae	Bhilava, Bibba	Ripe thalamus and seeds are roasted and eaten
73	<i>Smithia sensitiva</i> Ait.	Smilacaceae	Ghotvel	Fresh young shoots and leaves are used as vegetable
74	<i>Solanum anguivi</i> Lam	Fabaceae	Kavlu	Tender shoots are used as vegetable
75	<i>Sterculia urens</i> Roxb.	Solanaceae	Dorli, Chichardi	Ripe fruits are eaten
76	<i>Syzygium cumini</i> (L.) Skeels	Sterculiaceae	Kandol	Gum is edible
77	<i>Syzygium tamilnadensis</i> Radhakr.&Chithra	Myrtaceae	Jambhul	Ripe fruits are eaten
78	<i>Tamarindus indica</i> L.	Myrtaceae	Khat Jambool	Ripe fruits are eaten
79	<i>Teramnus labialis</i> (L. f.) Spreng.	Caesalpiniaceae	Chinch	Fruits are eaten
80	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Fabaceae	Ran-udid	Seeds are eaten
	<i>Terminalia chebula</i> Retz.	Combretaceae	Behda, Bhela	Mesocarp and seeds are eaten
		Combretaceae	Harad	Mesocarp and seeds are eaten

81	<i>Woodfordia fruticosa</i> (L.) Kurz	Lythraceae	<i>Dhayati</i>	Flowers are used as vegetables
	<i>Xantolis tomentosa</i> (Roxb.) Raf.	Sapotaceae	<i>Waval/ Kumbal</i>	Ripe fruits are eaten
82	<i>Zanthoxylum rhetsa</i> (Roxb.) DC.	Rutaceae	<i>Tirphal, Tisal</i>	Fruit are used as spices and condiments
83	<i>Ziziphus jujuba</i> Mill.	Rhamnaceae	<i>Bor</i>	Ripe fruits are eaten
84	<i>Ziziphus oenoplia</i> Mill.	Rhamnaceae	<i>Kaner</i>	Ripe fruits are eaten
85	<i>Ziziphus rugosa</i> Lam. Var. <i>rugosa</i>	Rhamnaceae	<i>Toran</i>	Ripe fruits are eaten

## RESULTS AND DISCUSSION

The wild edible plants not only fulfil the food requirements of the people, but also seem to be responsible for their good health (Sharma & Singh 2001). During 2008-2012, Dapoli tehsil was inventoried for ethnobotanical wild nutraceuticals and total 82 plant species have been reported. Total 82 wild edible plant species belongs to 68 genera of 48 families were collected and identified. Out of 82 species, 01 species belongs to gymnosperms, 70 species belongs to 58 genera of 39 Dicotyledonous families and 11 species belongs to 09 genera belongs to 08 families of monocotyledons are reported. It is also reported that 51 types of wild fruits / seeds followed by 20 types of wild leaves / shoot followed by 07 types of wild underground parts/ bulbils and 04 types of wild flowers were used by the villagers and tribal people as supplementary food.

During field visits it is also observed that some wild plants are eaten not only as supplementary food but also to avoid the seasonal disorders of human being like diarrhoea, dysentery, stomach-ache, etc.

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