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Diversity of Wild Edible Plants in Dhadgaon Block of Nandurbar District in Maharashtra, India

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Abstract

Present study deals with survey and documentation of wild edible plants (WEPs) in Dhadgaon/Akrani region of Nandurbar district. Present paper is the first documentation of WEPs used by local communities in Nandurbar district. Data on about 91 wild edible plant species in 69 genera of 40 families was recorded. Majority of WEPs belongs to family Fabaceae (11 species), Araceae (7), Asparagaceae (6), Malvaceae (6), Amaranthaceae (5), Apocynaceae (5), Asteraceae (4), Dioscoriaceae (4), Rubiaceae (4) and Cucurbitaceae (3). The genera represented by the highest number of species are *Chlorophytum* (5 species) followed by *Dioscorea* (4), *Amaranthus* (3) and 2 species each from *Amorphophallus, Arisaema, Bauhinia, Cassia, Launea, Moringa, Smithia, Sterculia, Vigna* and *Ziziphus.* Most of the species were consumed as leafy vegetable (46 species) or fruits (34 species). More than one plant part is used from 14% of the species. These wild edible plants are sources of food security for local people, especially those living in remote rural areas. Some species are wild relatives of crops that could be used for crop improvement program in future. Several species have potential values for further domestication and commercial exploitation which will help in biodiversity conservation and sustainable utility.

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Keywords

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Introduction

More than 12,000 plant species considered edible by humans, i.e., plants for human consumption account for about 5% of the total plant species of the world (Kunkel, 1983). It is estimated that in India about 800 species are consumed as wild edible plants (Singh and Arora, 1978). Wild edible plants (WEPs) refer to species that are harvested or collected from their wild natural habitats and used as food for human consumption (Lulekal et al., 2011; Heywood, 2011; Seal, 2012). WEPs play a major role in meeting the nutritional requirement of the tribal population in remote areas (Sundriyal and Sundriyal, 2001). WEPs serve as supplementary food for non-indigenous people and are one of the primary sources of cash income for poor communities (Uprety et al., 2012; Ghorbani et al., 2012; Menendez-Baceta et al., 2012). WEPs have an important role in ensuring food security and improve the nutrition in the diets of many people in developing countries (Lulekal et al., 2011; Ghorbani et al., 2012). WEPs are potential sources of species for

domestication and provide valuable genetic traits for developing new crops through breeding and selection (Pandey et al., 2008; Ford-Lloyd et al., 2011).

India has a tribal population of 42 million, of which some 60 per cent live in forest areas and depend on forests for various edible products (Jana and Chauhan, 1998). Several researchers have documented the WEPs used in the diet by tribes in various parts of India, nutritive values of WEPs and need for revival of knowledge associated with WEPs (Sundriyal and Sundriyal, 2004; Konsam et al., 2016; Mahapatra and Panda, 2012; Khyade et al., 2009).

Nandurbar district is a tribal district situated in the North West of Maharashtra. The tribal population consisting of Bhils, Gamits, Koknas, Pawara forms about 40% of the population of the district (Patil, 2010). These tribal communities are mainly dependent on forest products. They still use several wild plants growing around them for different purposes like food, fodder, medicine, timber, firewood, etc.

Nandurbar and adjoining areas are well studied in ethnobotany point of view. The notable works have been published by Tayade et al. (2016), Patil and Bhaskar (2005), Padavi and Patil (2013), Lande and Kalase (2014), Patil (2003), and Quazi and Molvi (2014); however these works focus on medicinal properties of plants. Very few records were made on wild edible plants. During working on Maharashtra Gene Bank Programme, it was found that Dhadgaon region is very rich in wild food diversity; and in literature the data on WEPs is very limited in Dhadgaon region of Nandurbar district. Present paper reveals the information on exploration and documentation of WEPs with respect to correct identification, habit and habitat, edible part, processing method, season of availability, domestication and conservation.

Materials and methods

Study area

The study area is situated in Satpuda ranges. The study was carried out in 12 villages in Dhadgaon region of Nandurbar district. Nandurbar district is situated in Northern part of the state of Maharashtra bordering the state of Gujarat and Madhya Pradesh. Nandurbar district is situated between 20º to 21º North latitude and 74º 55′ and 76º 59′ East longitude. The forest in the district covers an area of 4732.199 sq. km. (Tayade et al., 2016) (Fig. 1).

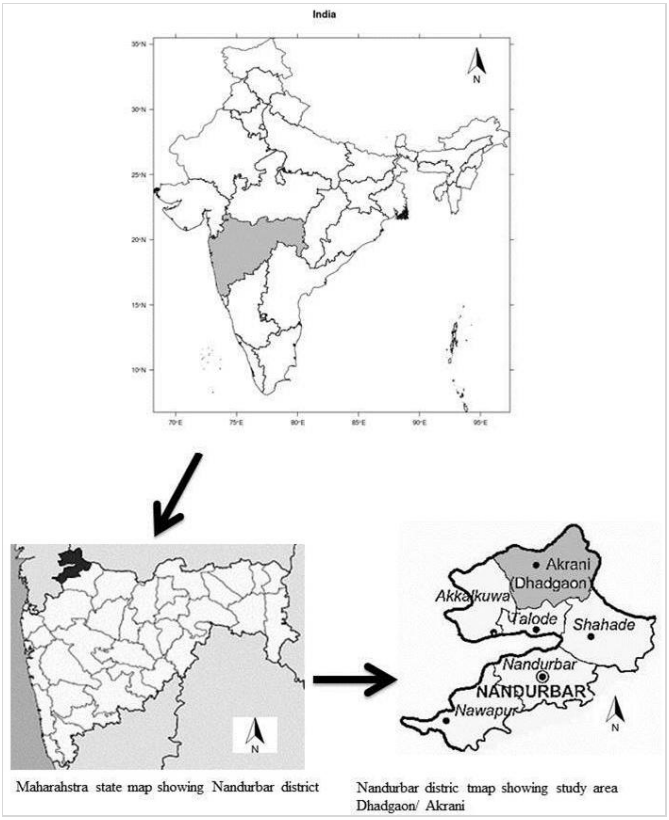

Fig. 1: Location of the area covered in an investigation into the wild edible plants in Dhadgaon (Akrani).

Data collection

For data collection household survey and field studies were carried out during different seasons of the year (2014-2016). Data of wild edible plants were documented through different interview methods [participatory rural appraisal (PRA), direct observation, semi-structured interviews, key informant interviews, individual discussions, focus group discussions and questionnaires]. Besides these, exhibition cum recipe competition of wild edible plants was organized for in-depth understanding of plant diversity.

During survey, the local name, parts used, habit and habitat, collection period and preparation methods, propagation, utility other than food, and people's perceptions about plants were recorded and few specimens were collected. Collected plant specimens were identified by using relevant scientific literature and regional/ state flora (Cooke, 1967; Sharma et al., 1996; Singh and Karthikeyan, 2000; Singh et al. 2001).

Results and discussion

Diversity of species, growth forms and edible parts

During present study 91 species of wild edible plants were documented that belongs to 69 genera 40 families of flowering plants (Annexure 1). Majority of edible plants belongs to family Fabaceae (11 species), Araceae (7), Asparagaceae (6), Malvaceae (6), Amaranthaceae (5), Apocynaceae (5), Asteraceae (4), Dioscoriaceae (4), Rubiaceae (4), Cucurbitaceae (3). The genera represented by the highest number of species are *Chlorophytum* (5 species) followed by *Dioscorea* (4), *Amaranthus* (3) and 2 species each from *Amorphophallus, Arisaema*, *Bauhinia*, *Cassia*, *Launea*, *Moringa*, *Smithia*, *Sterculia*, *Vigna and Ziziphus* (Fig. 2). Documented flowering plants distributed into different habits with herbs (42%), trees (37%), Climber (13%) and shrubs (8%) (Fig. 3). Out of these recorded wild edible plants 41% species has edible leaves/ tender stem, 29 % species has edible fruits, 16% species has edible inflorescence and flowers, 9 % species has storage parts (Tuber, Rhizome, Corm, bulbils etc.) and 5% species has edible seeds. The most frequently used parts are young leaves/ stem, fruits and flower/ inflorescence (Fig. 4).

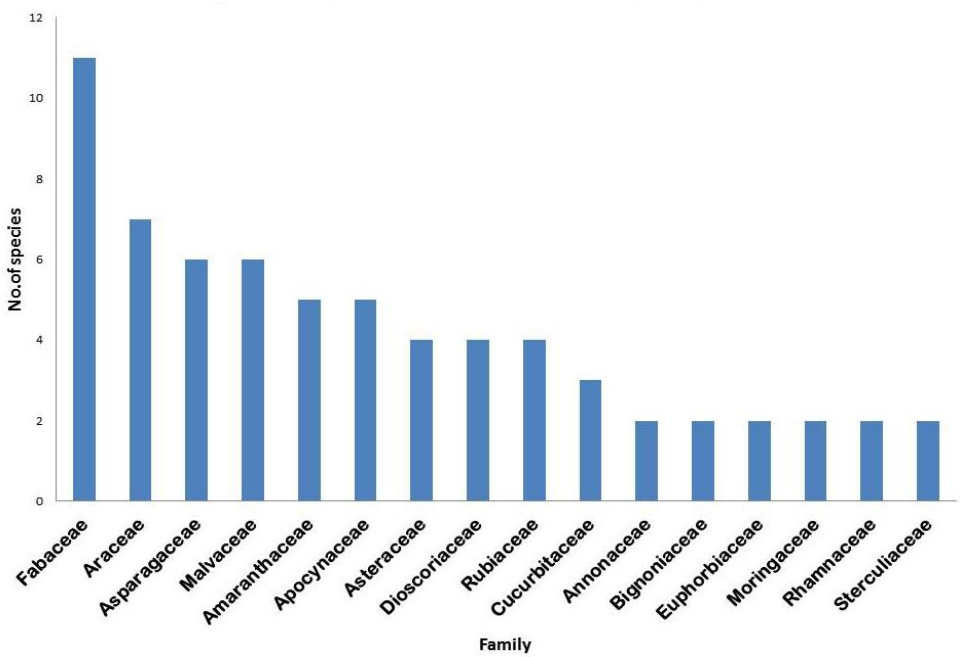

Fig. 2: Family-wise distribution of wild edible plant species.

More than one plant part is used from about 14% of the species e.g. petioles and leaves of *Colocasia esculenta* used for preparation of various dishes of vegetable as well as corms are also edible and stored for lean period; leaves, flower and tender fruits of *Bauhinia racemosa* are edibles; tender leaves, young flowers, fruits and seeds of *Tamarindus indica* are edible.

Storage of edible plant parts

Underground tubers and bulbils of plants like *Amorphophallus sp.*, *Colocasia esculenta*, *Dioscorea*, are often dried in the sun after collection and stored. Leaves of various plants like *Amaranthus* sp. *Sauromatum venosum*, *Hibiscus* sp. and calyx of *Hibiscus* sp. are also stored by sun drying for lean period. Pickles are made of fruits like *Capparis zeylanica, Carissa carandas, Carrisa congesta, Catunaregam spinosa, Garuga pinnata, Meyna laxiflora, Radermachera xylocarpa, Spondias pinnata*, and *Tamilnadia uliginosa*, etc.

Multiple uses of wild edible plants

Many wild edible plants have uses other than food, e.g. *Agave* sp. is used as hedge, fiber plant and as soil binder. *Bambusa arundinacea* is important timber plant and many household goods are made from it. *Cassia fistula*, *Celosia argentea*, *Chlorophytum borivilianum Holarrhena pubescens* and *Wrightia tinctoria* are used as medicine. *Catunaregam spinosa* is used in grain storage; *Crotalaria juncea* is grown for green manure;

Hibiscus sp. and *Bombax ceiba* are fiber plant; *Alocasia macrorhizos, Basella alba, Bauhinia* sp., *Dioscorea alata,* and *Thespesia populnea* are grown as ornamental or avenue plants.

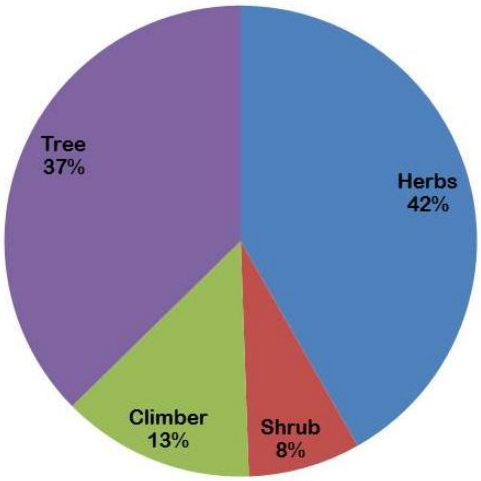

Fig. 3: Diversity in the habits of wild edible plants.

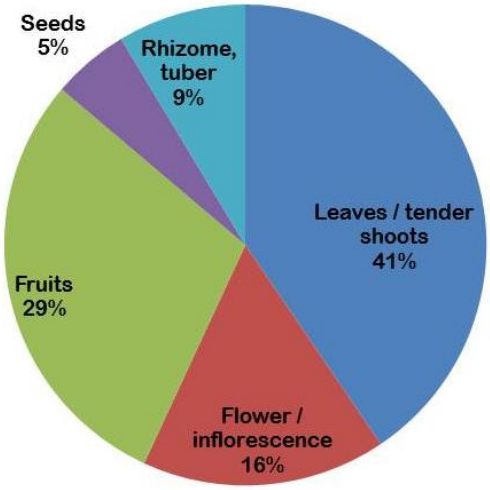

Fig. 4: Wild edible plants and their edible parts used.

Role of wild relatives of crop for genetic improvement and crop production

Wild crop relatives are of great importance to maintain the productivity and stability of traditional agro-ecosystems (Meilleur and Hodgkin 2004; Harlan, 1965). Some of the wild relatives of fruit, vegetable and fiber crops documented in this study are *Amaranthus* sp., *Amorphophallus commutatus, Ensete superbum, Hibiscus sp., Momordica dioica, Moringa concanensis, Vigna* sp., *Ziziphus rugosa*, etc. Conservation through domestication of these plant species will help in crop genetic improvement program in future.

Domestication and wider use of wild edible plants

All domesticated plants had passed during the course of human civilization, as the entire spectrum represents a living analogue of the wild to semi-wild to domesticated continuum (Asfaw and Tadesse, 2001). Periodic use, occasional purposeful planting and harvesting, marketability, and proximal growth with gardens, crop fields, and living quarters disclose the position of wild edible species in the line-up of useful plants (Asfaw and Tadesse, 2001). During present study many edible plant species like *Amorphophallus* sp., *Colocasia esculenta*, *Dioscorea* sp., *Emblica officinalis, Hibiscus* sp., *Tamarindus indica* and *Vigna mungo* occurred in wild as well as cultivated forms while some plants like *Agave* sp., *Bauhinia purpurea, Moringa oleifera, Sesbania grandiflora, Alocasia macrorhizos*, etc. are introduced in study area for various purposes; however in course of time they get naturalized and people are utilizing them commonly.

The fruits of *Annona squamosa, Carissa carandas, Carrisa congesta, Garuga pinnata, Meyna laxiflora* are widely sold on roadsides and in the market place for income generation. Although *Annona squamosa* is fruit crop in other regions of India, but in study area it occurs in nature only, and there is great scope for domestication of such wild edible plants in study area. Fruits of many species can be considered for value addition and processing into more palatable and storable food products e.g. *Annona sqaumosa, Tamarindus indica, Capparis zeylanica, Carissa carandas, Carrisa congesta, Catunaregam spinosa, Garuga pinnata, Meyna laxiflora, Radermachera xylocarpa, Spondias pinnata,* and *Tamilnadia uliginosa* can be processed into jam, jelly, candy, pickles, sharbat (juices), ice-creams, various types of sweets etc. The domestication of potential wild edible plants along integration into existing land use will increase livelihoods of rural community. With better market linkages in place, wild edibles could also be promoted for use by urban dwellers.

Conclusion

Present paper is the first documentation of WEPs used by local communities in Nandurbar district. Local community not only cultivates various crops, but also collects wild edible plants as food. Present study showed the diversity of WEPs and related indigenous knowledge in this area. WEPs provide food and nutrients, such as

essential amino acids, various vitamins and minerals which are needed to keep healthy and enhance immunity against diseases and infections to local communities. If properly harvested, WEPs could be the source of cash income for local people.

Present study may provide basic information for priority list preparation for domestication, conservation, possibly further exploitation, and will preserve local traditional knowledge.

Conflict of interest statement

Authors declare that they have no conflict of interest.

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Annexure 1: List of WEPs with common name, scientific name, habit and habitat, edible parts used by local community in Nandurbar district.

Sl. No.	Common name	Scientific name	Family	Habit	Habitat	Edible part	Season
1.	Ghaypat	*Agave americana* L.	Asparagaceae	Robust herbs	Bunds of social forestry, hill slopes	Newly emerged shoots	Rainy
2.	Ghaypat	*Agave sisalana* Perrine ex Engelm.	Asparagaceae	Robust herbs	Bunds of social forestry, hill slopes	Newly emerged shoots	Rainy
3.	Kali alu	*Alocasia macrorhizos* G. Don	Araceae	Herbs	Marshy and moist places	Leaves	Rainy
4.	Dethachi bhaji/ Dehgad	*Alternanthera sessilis* (L.) R. Br. ex DC.	Amaranthaceae	Herbs	Weed of cultivated fields and waste lands	Tender stem and leaves	Rainy
5.	Tandalya/ Tandulka	*Amaranthus roxburghianus* H.W. Kung.	Amaranthaceae	Herbs	Weed of cultivated fields and waste lands	Tender stem and leaves	Rainy
6.	Kate math	*Amaranthus spinosus* L.	Amaranthaceae	Herbs	Weed of cultivated fields and waste lands	Tender stem and leaves	Rainy
7.	Veda math	*Amaranthus viridis* L.	Amaranthaceae	Herbs	Weed of cultivate fields	Tender stem and leaves	Rainy
8.	Sheval	*Amorphophallus commutatus* (Schott) Engl.	Araceae	Herbs	Forest understory	Corm, Tender leaves	Rainy
9.	Suran	*Amorphophallus paeoniifolius* (Dennst.) Nicolson	Araceae	Herbs	Forest understory	Corm	Rainy
10.	Sitaphal	*Anona squamosa* L.	Annonaceae	Small trees	Hill slopes	Fruits	Winter
11.	Pivla dhotara	*Argemone mexicana* L.	Papaveraceae	Herbs	Weed of cultivated fields and waste lands	Flower stalks	Through out year
12.	Badada	*Arisaema murrayi* Graham	Araceae	Herbs	Forest understory	Corm	Rainy
13.	Diva/ Nagphani	*Arisaema tortuosum* (Wall.) Schott	Araceae	Herbs	Forest understory	Corm	Rainy
14.	Bambu /Vasate	*Bambusa arundinacea* (Retz.) Willd.	Poaceae	Herbs	Hill slopes, river banks	Tender shoots	Rainy
15.	Bhaji vel	*Basella alba* L.	Basellaceae	Climbers	On hedges of kitchen garden	Tender leaves	Through out year

Sl. No.	Common name	Scientific name	Family	Habit	Habitat	Edible part	Season
16.	Kanchan	*Bauhinia purpurea* L.	Fabaceae	Trees	Social forestry cultivated along roadsides	Tender leaves	Through out year
17.	Shida (Pod) / Apta (tender leaves)/ Kohrula (Flower, leaf)	*Bauhinia racemosa* Lam.	Fabaceae	Trees	Hill forest, bunds of cultivated fields	Fruits, Tender leaves, flowers	Through out year
18.	Pochi	*Blumea eriantha* DC.	Asteraceae	Herbs	Wasteland and open area	Leaves	Rainy
19.	Savari/ savar	*Bombax ceiba* L.	Bombacaeae	Trees	Open forest	Flowers	Summer
20.	Asand	*Bridelia squamosa* (Lam.) Gehrm.	Euphorbiaceae	Small trees	Forest clearings	Fruits	Summer
21.	Waghati / Ghot	*Capparis zeylanica* L.	Capparaceae	Climbers	Dry scrub forest	Fruits	Summer
22.	Karvand	*Carissa carandas* L.	Apocynaceae	Thorny shrubs	Open hill slopes	Fruits	Summer
23.	Chothi karvand	*Carrisa congesta* Wight	Apocynaceae	Thorny shrubs	Open hill slopes	Fruits	Summer
24.	Bahava	*Cassia fistula* L.	Fabaceae	Deciduous trees	Forest area	Tender leaves, flowers	Rainy, summer
25.	Takala/ Tarvata/ Powadya	*Cassia tora* L.	Fabaceae	Herbs	Roadsides, bunds of cultivated lands and wasteland	Tender leaves	Rainy
26.	Gal/ Gela phal	*Catunaregam spinosa* (Thunb.) Tirveng.	Rubiaceae	Tree	Open Forest	Tender fruits	Summer
27.	Kurdu	*Celosia argentea* L. var. *argentea*	Amaranthaceae	Herbs	Wasteland and Weed of cultivated land	Leaves, tender stem	Through out year
28.	Kavli Bhaji/ Safed musali	*Chlorophytum borivilianum* Santapau & R.R. Fern.	Asparagaceae	Herbs	Hilly slopes	Tender leaves	Rainy
29.	Kavala	*Chlorophytum breviscapum* Dalz.	Asparagaceae	Herbs	Steep hill slopes	Tender leaves	Rainy
30.	Savaliche pan	*Chlorophytum nimmonii* Dalzell	Asparagaceae	Herbs	Rocky hill slope in shady places	Leaves	Rainy
31.	Kavli Bhaji/ Safed musali	*Chlorophytum tuberosum* (Roxb.) Baker	Asparagaceae	Herbs	Hilly slopes	Leaves	Rainy
32.	Alu, Teri, Tera, Aohwlya	*Colocasia esculenta* (L.) Schott.	Araceae	Herbs	Shady, marshy and water logging places	Corm, petiole, Leaves	Rainy

Sl. No.	Common name	Scientific name	Family	Habit	Habitat	Edible part	Season
33.	Keni	*Commelina benghalensis* L.	Commelinaceae	Herbs	Open and Wet places	Leaves	Rainy
34.	Chuch	*Corchorus olitorius* L.	Malvaceae	Herbs	Wasteland, weed of cultivated fields	Tender leaves,	Rainy
35.	Bhokar/ Shelti /Shelut	*Cordia dichotoma* G. Forst.	Boraginaceae	Trees	Forest areas	Fruits	Summer
36.	Pevkand	*Costus speciosus* (J. Koenig) Sm.	Costaceae	Herbs	Forest understory; moist and shady places	Flowers	Rainy
37.	Tag/ Tagada	*Crotalaria juncea* L.	Fabaceae	Herbs	Wastelands, roadside areas	Flowers	Winter
38.	Mek	*Cucumis setosus* Cogn.	Cucurbitaceae	Climbers	Field bunds, open forests	Fruits	Rainy
39.	Bandgul/ Bendgul/ Bhedval	*Dendrophthoe falcata* L.f.	Loranthaceae	Shrubs (Stem parasite)	Parasite on trees	fruit	summer
40.	Konkand, Konphal	*Dioscorea alata* L.	Dioscoreaceae	Climbers	Cultivated but many places naturalized	Tuber, bulbil	Rainy
41.	Kadu karanda, Kadu kand	*Dioscorea bulbifera* L.	Dioscoreaceae	Climbers	Forest borders on hedges	Tuber, bulbil	Rainy
42.	Ulshi	*Dioscorea hispida* Dennst.	Dioscoreaceae	Climbers	On hedges and bushes	Tuber, bulbil	Rainy
43.	Chai vel	*Dioscorea pentaphylla* L.	Dioscoreaceae	Climbers	Forest borders on hedges	Inflorescence	Rainy
44.	Tembhurni	*Diospyros melanoxylon* Roxb.	Ebenaceae	Small trees	Deciduous forest	Unripe and ripe Fruits	Winter/ summer
45.	Awala	*Emblica officinalis* Gaertn.	Euphorbiaceae	Small trees	Open forest and cultivated	Fruits	Winter
46.	Kelful /Bankel/ Rankel/ Kavadar	*Ensete superbum* (Roxb.) Cheesm.	Musaeae	Herbs	Steep rocky hill slopes	Rhizome, young shoot, flowers Immature fruit	Rainy
47.	Umbar	*Ficus racemosa* L.	Moraceae	Trees	Forest areas, along streams and cultivated	Fruit	Summer
48.	Ghugurval	*Flacourtia indica* (Burm. f.) Merr.	Salicaceae	Trees	Dry deciduous forests	fruits	Summer
49.	Kakad	*Garuga pinnata* Roxb.	Burseraceae	Trees	Hill forest	Fruit	Summer
50.	Dhaman	*Grewia tiliifolia* Vahl.	Malvaceae	Trees	Forest area	fruit	Summer, winter
51.	Khadak ambadi	*Hibiscus caesius* Garcke.	Malvaceae	Shrubs	Weed on road side	fruit, leaves	Rainy

Sl. No.	Common name	Scientific name	Family	Habit	Habitat	Edible part	Season
52.	Dumkha	*Hibiscus cannabinus* L.	Malvaceae	Herbs	Mostly cultivated sometimes escaped	Leaves, tender shoots, flower	Rainy, stored for lean season
53.	Dumkha	*Hibiscus sabdariffa* L.	Malvaceae	Herbs	Mostly cultivated sometimes escaped	Leaves, tender shoots, flower	Rainy, stored for lean season
54.	Kuda	*Holarrhena pubescens* Wall. ex G. Don	Apocynaceae	Trees	Hill slopes	Flowers	Summer
55.	Shiri	*Holostemma ada-kodien* Schult.	Apocynaceae	Climbers	Forest area	Flower, Fruit	Summer
56.	Bondara	*Lagerstroemia parviflora* Roxb.	Lythraceae	Trees	Hill slopes	Leaves	Rainy, summer
57.	Pathari	*Launaea intybacea* (Jacq.) Beauverd	Asteraceae	Herbs	Weed of cultivated fields and wastelands	Leaves	Rainy, winter
58.	Akkarghode	*Launaea procumbens* (Roxb.) Ramayya & Rajgopal.	Asteraceae	Herbs	Weed of cultivated fields and wastelands	Leaves	Rainy, winter
59.	Motha dinda	*Leea macrophylla* Roxb. Ex Hornem.	Vitaceae	Shrubs	Hill forest	Young leaves	Rainy
60.	Mahua	*Madhuca longifolia* (J. Koenig ex L.) J.F. Macbr.	Sapotaceae	Trees	Forest area, bunds of cultivated lands	Flower, fruit, seeds	Summer
61.	Ambat Bintukli	*Maesa indica* (Roxb.) A. DC.	Myrsinaceae	Shrubs	Forest clearings	Leaves	Through out year
62.	Aliv, Helu, Alu	*Meyna laxiflora* Robyns	Rubiaceae	Thorny small trees	Moist deciduous forest	Fruits	Late Summer
63.	Humb	*Miliusa tomentosa* (Roxb.) J. Sinclair	Annonaceae	Trees	Open forest	fruits	Summer
64.	Kartoli	*Momordica dioica* Roxb.ex. Wild	Cucurbitaceae	Climbers	Open steep hill slope	Fruits	Rainy
65.	Kadu shevaga/ Ran shevga	*Moringa concanensis* Nimmo	Moringaceae	Trees	Forest area	Leaves, flowers, fruits	Through out year
66.	Shevga	*Moringa oleifera* Lam.	Moringaceae	Trees	Community land, cultivated on back yard	Leaves, flowers, fruits	Through out year
67.	Tetu	*Oroxylum indicum* (L.) Kurz	Bignoniaceae	Trees	Open forest	Young fruits	Rainy
68.	Ladukli	*Pavetta tomentosa* Roxb ex Sm.	Rubiaceae	Shrubs	Forest understory	Flowers	Winter
69.	Bhafali	*Pimpinella wallichiana Gandhi.*	Apiaceae	Herbs	Grassland associate	Leaves	Rainy

Sl. No.	Common name	Scientific name	Family	Habit	Habitat	Edible part	Season
70.	Ghol	*Portulaca oleracea* L.	Portulacaceae	Herbs	Weed of cultivated and waste land	Tender stem and leaves	Rainy
71.	Kharshenga	*Radermachera xylocarpa* (Roxb.) Roxb. ex K. Schum.	Bignoniaceae	Trees	Deciduous forest	Young fruits	Winter
72.	Lothi	*Sauromatum venosum* (Aiton) Kunth	Araceae	Herbs	Forest understory in rock crevices	Ripe fruits, leaves	Summer
73.	Koshim	*Schleichera oleosa* (Lour.)Oken	Sapindaceae	Trees	Forest borders	Ripe fruits	summer
74.	Mokha	*Schrebera swietenioides* Roxb.	Oleaceae	Deciduous trees	Forest area	Tender Leaves	Winter, summer
75.	Hadaga	*Sesbania grandiflora* L. Poir.	Fabaceae	Trees	Cultivated in kitchen garden but naturalized in many places	Flowers	Rainy
76.	Kuala	*Smithia conferta* Sm.	Fabaceae	Herbs	Grassland associate	Tender Leaves	Rainy
77.	Kavali bhaji	*Smithia hirsuta* Dalzell.	Fabaceae	Herbs	Grassland associate	Tender Leaves	Rainy
78.	Donger Bhaji	*Solena amplexicaulis* (Lam.) Gandhi	Cucurbitaceae	Climbers	Hill slopes on bushes	Fruits	Rainy, winter
79.	Khadak teri	*Sonerila scapigera* Dalzell	Melastomataceae	Herbs	Vertical rocks and tree trunks	Leaves	Rainy
80.	Borthada	*Sphaeranthus indicus* L.	Asteraceae	Herbs	Wastelands	Tender Leaves	Rainy
81.	Ambada	*Spondias pinnata* (L. f.) Kurz	Anacardiaceae	Trees	Forest area	Young leaves, fruits	Summer
82.	Kukurval	*Sterculia guttata* Roxb.	Sterculiaceae	Trees	Deciduous forest	Seeds	Summer
83.	Kahandol	*Sterculia urens* Roxb.	Sterculiaceae	Trees	Deciduous forest	Seeds	Summer
84.	Chinch	*Tamarindus indica* L.	Fabaceae	Trees	Social forestry, road side cultivation	Tender leaves Flowers, fruits, seeds	Winter
85.	Pendhara	*Tamilnalia uliginosa* (Retz.) Tirveng & Sastre	Rubiaceae	Trees	Scrub forest	Fruits	Rainy
86.	Garbhend	*Thespesia populnea* (L.) Soland ex. Corr.	Malvaceae	Trees	Social forestry, road side cultivation	Tender Leaves	Through out year
87.	Ran udid	*Vigna radiata*	Fabaceae	Herbs	Grassland associate	Tender Leaves, seeds	Rainy

Sl. No.	Common name	Scientific name	Family	Habit	Habitat	Edible part	Season
88.	Dudh halinda	*Vigna vexillata* (L.) A. Rich.	Fabaceae	Climbers	Forest borders	Tuber, seeds	Rainy
89.	Kali kudai	*Wrightia tinctoria* R.Br.	Apocynaceae	Trees	Forest	Flowers	Summer
90.	Bor	*Ziziphus mauritiana* Lam.	Rhamnaceae	Trees	Open forest, bunds	Fruits	Summer
91.	Toran	*Ziziphus rugosa* Lam.	Rhamnaceae	Woody climbers	Forest margins	Fruits	Summer