



Exploration and documentation of wild food plants from Satara district, Maharashtra (India)

Swapnaja Deshpande^{1*}, Uday Pawar², Rajendra Kumbhar³

¹ Department of Botany, Y. C. I. S. Satara, Maharashtra, India

² Department of Botany, A. S. S. Mahavidyalaya, Medha, Maharashtra, India

³ Department of Chemistry, Jaysingpur College, Jaysingpur, Maharashtra, India

Abstract

Traditional knowledge throughout the world includes health, nutrition, agriculture, management and utilization of natural resources. In past, tribals consume main staple diet along with wild food supplements which helps to balance their diet. The 21 century is coming with the food scarcity as the global population is increasing day by day. But the available food sources are limited which are not sufficient. The present paper deals with the survey and documentation of food potential of edible plants consumed by people in rural areas from the Satara district. Total ninety plants were recorded belonging to 46 families and 73 genera. The edible part of these species include rhizomes, corms, stem, leaves, petiole, inflorescence, flowers, petal, thalamus, fruits, seeds and aril.

Keywords: health crisis, leafy vegetables, traditional knowledge, wild food plants

1. Introduction

Present day modern people are ignorant about traditional food. The knowledge of traditional food with farmers, hunters and nomadic tribes is of great importance. These people had survived in extreme food scarcity periods from time immemorial. The present paper is thinking about the food for future. Food scarcity, nutrition crisis, pesticide residue, drought fighting are some serious problems of this century. As the modern food style, genetically modified crops and hybrid varieties are designed for commercial benefit and not for quality to balance the nutrition demand of this generation. In these circumstances we have to search for alternatives which can fulfill the human needs of nutrition and health. Some of wild food, medicinal plants represents the wild precursors of modern crops therefore it is necessary to protect and use sustainably for better future. The present investigation was undertaken to explore the wild species having food potential from the study region. The global population is increasing at alarming rates but the area under cultivation of agricultural crops is not increasing at contrast it is decreasing day by day due to different reasons *viz.* civilization, industrialization etc. Wild vegetables can help us to meet the increasing demand of food as they don't have any special requirements to grow. They grows in different seasons in cultivated fields and wastelands without any special care for fertilizers and irrigation. In coming future we are going to face the problem of health and nutrition crisis where the healthy and nutritious wild edibles are going to help us to overcome these challenges.

Indian tribes utilize about 9500 plants in their livelihood for various purposes. Among these 3900 plants are used as edibles (Anonymous, 1995) [2]. Aborigines consume a main staple diet and it is supported with supplementary wild foods. These species are consumed by various communities depending on the local availability. The pattern of the tribal livelihood has not changed since time immemorial. In the dense forest area, nature is so kind that for thousands of years it has been possible for these tribals to live in comparative

ease by simply hunting and food gathering (Kosambi, 1962) [17]. Tribals and local communities have accurate knowledge of wild food resources due to their long association with nature (Jain and Sinha, 1988) [12]. The unconventional wild edible plants are sources of fats, proteins, rich source of micro-nutrients and trace elements (Nilegaonkar *et al.*, 1985; Kulkarni *et al.*, 2003; Kulkarni, 2006) [6, 22, 21]. Eighteen species of food potential were recorded from Kolwan Tehsil, Yavatmal district (Wankhade, 2015) [43]. Digras Tehsil from Yavatmal district reveals 25 wild edibles (Dhore *et al.*, 2012) [10]. More than 155 plant species are used as supplementary and emergency food in Assam (Borthakur, 1996) [5]. The survey of tribes inhabiting in Western Ghats of Kerala reveals that large number of wild plant species are used as edibles (Radhakrishnan *et al.*, 1996; Jawahar and Raveendran, 1996) [30, 13]. About 32 wild edible species are reported from Nasik district (Sharma and Lakshminarasimhan, 1986) [36]. Traditionally used wound healing 30 local plant species were reported from Sangli district (Patil *et al.*, 2009) [29]. About 70% of world's population depends on the traditional medicines for primary health care and about 90% of traditional medicines involve the use of plant extracts (Virira and Skorupa, 1993) [42]. The tribals in Chandrapur district use 61 species as wild edibles (Reddy, 2012) [32]. Aborigines from Gadchiroli district consumes 61 species as food (Setiya *et al.*, 2016) [35]. Several workers *viz.* Balkundi (1998) [3]; Sundriyal and Sundriyal (2004) [37]; Kulkarni (2006) [22]; Bhogaonkar *et al.* (2010) [4]; Deshmukh and Shinde (2010) [8]; Dhore *et al.* (2012) [10]; Rasingam (2012) [31]; Deshpande and Kulkarni (2013) [9]; Rekha and Kumar (2014); Vijigiri *et al.* (2015) [41]; Satpute (2015) [34] worked on the wild edibles from various tribal areas in Maharashtra. Earlier work on wild edible plants from Maharashtra like Nasik, Amravari, Buldhana, Kolhapur, Jawhar were carried out by Vartak (1959); Vartak and Kulkarni (1987); Kulkarni and Kumbhoikar (1992), Patil and Patil (2000) [28], Bhogaonkar *et al.* (2010) [4], Kshirsagar *et al.* (2012) [18], Mahadkar and Jadhav (2013) [23], Joshi *et al.* (2013) [14].

The wild food plants play an important role in the dietary pattern (Chitre *et al.*, 1983) ^[6]. The information on unconventional wild fruits plants with appropriate methods/recipes from Mahadeo koli tribe of Western Maharashtra was documented (Kulkarni and Kumbhojkar, 1992) ^[20]. Unconventional fruits and vegetables have nutritional values and consumed by tribal people from India either raw or processed (Vartak and Ghate, 1994, Ghate *et al.*, 1997, Agrahar-Murugkar and Subbulakshmi, 2005, Kulkarni, 2007) ^[11, 20]. The unconventional wild edible plants are resources of fats, proteins, rich source of micro-nutrients and trace elements (Vartak and Kulkarni, 1987; Kulkarni *et al.*, 2003) ^[40, 19]. About 300 diverse plant species belonging to 90 families utilized as food resources during famine were recorded (Nene, 2004) ^[24]. The survey of wild food plants from Orissa state reported 30 fruits, 30 leaves, 12 flowers, 11 seed, 14 tubers and 5 gums consumed by five tribal groups. These tribals consume 144 non-conventional food resources which are playing major role in nutritional point of view (Kulkarni, 2006) ^[22]. Wild edible plants used by tribes of Akole Tehsil, District Ahmednagar, Maharashtra were reported. They documented 31 plant species belonging to 23 families (Khyade *et al.*, 2009) ^[16]. Various methods on processing for preservation of wild fruits from Jawhar were reported (Chothe *et al.*, 2014) ^[7]. Konkan region of Maharashtra state reveals 58 species of wild vegetables (Khan and Kakde, 2014) ^[15]. Various regions of Maharashtra State have been explored and documented variety of wild edibles (Oak *et al.*, 2015) ^[26]. Tribal women of Thane district utilize 54 edible species (Oak *et al.*, 2015) ^[26]. Ethno botanical studies on wild edible plant among the Gond, Halba and Kaware tribes of Salekasa taluka in Vidarbha's Gondia District of Maharashtra State were carried out and 80 plant species were recorded (Patale *et al.*, 2015) ^[27]. Seventy three wild food resources belonging to 42 families consumed by Rajgond tribe were reported from Vidarbha (Deshpande *et al.*, 2015) ^[41].

The present study deals with the investigations into wild food resources of Satara district. The variety of wild food provides a balanced diet which includes fruits, nuts, berries, leafy vegetables, yams, tubers, inflorescence etc. These wild vegetables plays important role in sustenance of people residing in forested areas. Presently we reported 90 wild food plants belonging to 43 families from Satara district.

Satara is situated in the Sahyadri ranges of the Western Ghats. It is located within 17.5 to 18.11 N latitudes and 73.33 to 74.54 E longitudes. The district is irrigated with among the two largest rivers of South India i.e. Krishna and Koyana. Along with these Kudali, Venna, Tarali and Urmodi are the smaller rivers feeding the river Krishna. The river Bhima is represented by its small tributaries in the district i. e. Neera and Manganga. The average annual rainfall is 1350 mm. The climate ranges from rainiest region like Mahabaleshwar to driest in Man, Khatav. The district shows three distinct regions as western mountain region, middle basin zone and eastern plains.

The district constitute the innumerable flat topped hills forming extensive plateaus of Western Ghats. It also shows small hill ranges in eastern and central part. Plateaus are lateritic which supports unique and endemic flora during monsoon. The eastern or Deccan part is characterized by rich, fertile black soil called as regur. At some places soil is loamy which gradual transition of weathered and decomposed murum. These regions shows their typical climatic conditions

which supports particular vegetation types. The eastern zone comes under Sahyadri ranges with high rainfall, lateritic plateaus with peculiar plateau flora rich in endemics and ephemerals. The basin zone in district shows average climate, presence of basalt and alluvial soil with semi- evergreen species. The eastern part of the district is rain shadow zone exhibiting dry deciduous and scrub flora rich in medicinal plants.

The chief mineral constituents of the basalts are labradorite and augite, the two forming the bulk of the rock. Laterite occurs extensively covering almost all the plateaus of the Western Ghats- and also in the north and central portions of the district. The major crops are Rice, Jawar, Bajara, Wheat, Maize, Strawberry, and Chick pea, Sugarcane, Cotton, Groundnut, Beans, Soyabean, Potata, Grapes and Pomegranate etc.

2. Materials and Methods

The investigation was carried out for whole year especially in monsoon season from rural areas and vegetable markets in Satara. The information was gathered by local people from rural areas like Medha, Jaoli, Kusumbi, Ganja, Vele, Dabewadi, Parali, Bharsakhale, Rameli, Pimpalwadi, Dhawadshi, Varye, Diskal, Man, Khatav, Majgaon, Targaon, Vaduth, Nandgiri etc. by scheduled interviews, questionnaire and informal meetings. The diverse information about local names, habit, phenology, plant part, usages, recipes and their relevance with health and climate etc. was also inquired from the local people.

3. Result and Discussion

In the present investigation total 90 species belonging to 73 genera and 46 families of flowering plants were recorded from the Satara district. The present investigation revealed 44 wild fruits, 34 leafy vegetables, 6 flowers, 5 seeds, 3 stem, 2 gum, 2 inflorescence, aril, bark, corm, petal, petiole, thalamus and rhizome 1 each. Some of these were used to flavor, garnish or complement other food items.

Presently the world population is growing at fast rate and it is impossible to fulfill the food demand of all in present agricultural production. The area under agriculture is also decreasing for various purposes like construction. Then the world will be going to face health and nutrition crises in these circumstances wild edible species are the better source to meet the food demand. As they are good source of vitamins and minerals as well as require less or no maintenance. Therefore the documentation of non-conventional wild edible resources will play significant role in sustainability and food security in near future. They will fulfill the need of nutrition in coming generations. But unfortunately the knowledge of this wild treasure remains in the memory of elderly people and have danger of vanishing.

The present investigation will help in documentation of this peculiar knowledge as well as our tradition. The study of wild edibles can be used in development of domestication of these species for agriculture which will provide labor to the rural people. The marketing, processing and preparation of food items from the wild species will give rise to small scale food web providing job opportunities to many people in rural areas.

4. Conclusion

Exploration and documentation of wild food sources and the traditional knowledge of tribal people is the very urgent need

of time. Due to depleting forests, urbanization, lack of communication with rural people, ignorance about traditional food and wide acceptance of hybrid varieties in diet we are losing our own valuable nutritious wild food plants. As these wild plants make substantial part in daily food of local rural

people there is need to further analyze these plants for phytochemicals constituents. As well as it necessary to bring these wild plants under the managed cultivation to make them as source of income for poor rural families.

Table 1: List of wild species with edible and nutritional potential

Sr. No.	Botanical Name	Vernacular Name	Family	Habit	Habitat	Part Used	Purpose
1.	<i>Acacia catechu</i> (L. f.) Willd	Khair	Mimosaceae	Tree	Semi-evergreen forest	Bark	In pan masala
2.	<i>Acacia nilotica</i> (L.) Willd. ex Delile	Babhul	Mimosaceae	Tree	Dry open area	Gum	In ladu
3.	<i>Achyranthes aspera</i> L.	Aghada	Amaranthaceae	Herb	Roadsides	Young leaves	Vegetable
4.	<i>Aegle marmelos</i> (L.) Correa	Bel	Rutaceae	Tree	Around temple	Ripe fruit	Sharbat
5.	<i>Aerva lanata</i> (L.) Juss. ex Schult.	Ushi	Amaranthaceae	Herb	Wasteland in dry region	Young leaves	Vegetable
6.	<i>Amaranthus blitum var oleracea</i> Hook. f.	Tandulja	Amaranthaceae	Herb	In cultivated fields	Leaves	Vegetable
7.	<i>Amaranthus cruentus</i> L.	Dhesa	Amaranthaceae	Herb	In cultivated fields	Leaves, Stem	Vegetable
8.	<i>Amaranthus paniculatus</i> L.	Lalmath	Amaranthaceae	Herb	In cultivated fields	Leaves	Vegetable
9.	<i>Amaranthus spinosus</i> L.	Katemath	Amaranthaceae	Herb	Wasteland and garbage area	Leaves	Vegetable
10.	<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson	Suran	Araceae	Ephemeral	Forests in monsoon only	Corm	Vegetable
11.	<i>Anacardium occidentale</i> L.	Kaju	Anacardiaceae	Tree	In dry and semi-evergreen forests	Ripe Thalamus, Fruit	Raw, Vegetable
12.	<i>Anogeissus latifolia</i> (Roxb. ex DC.) Wall. ex Bedd.	Dhawada	Combretaceae	Tree	Dry deciduous forest	Gum	Ladu
13.	<i>Anona reticulata</i> L.	Ramphal	Anonaceae	Tree	Cultivated	Fruit	Raw
14.	<i>Anona squamosa</i> L.	Sitaphal	Anonaceae	Tree	Cultivated	Fruit	Raw
15.	<i>Apium graveolens</i> L.	Ajwain	Apiaceae	Herb	Cultivated	Fruit	Spices
16.	<i>Artocarpus heterophyllus</i> Lam.	Phanas	Moraceae	Tree	Evergreen forest	Leaves, Fruits, Seeds	Vegetable, Raw, Roasted (seed)
17.	<i>Averrhoa bilimbi</i> L.	Bilimbi	Averrhoaceae	Tree	Cultivated	Fruits	Raw
18.	<i>Azadirachta indica</i> A. Juss.	Kadunimb	Meliaceae	Tree	Dry region on field bunds	Leaves	Chutney
19.	<i>Brassica juncea</i> (L.) Czern.	Mohari	Brassicaceae	Herb	Waste places	Young leaves, Seeds	Vegetable, Spices
20.	<i>Buchanania lanzan</i> Spreng.	Charoli	Anacardiaceae	Tree	Dry deciduous forest	Fruit, Seed	Dry fruit, Roasted (Seed)
21.	<i>Canavalia ensiformis</i> (L.) DC	Abai-babai	Fabaceae	Climber	Cultivated in fields	Young pod	Vegetable
22.	<i>Capparis decidua</i> (Forssk.) Pax	Nepti	Capparidaceae	Shrub	Dry regions along roadside	Unripe fruits	Pickle
23.	<i>Capparis zeylanica</i> L.	Wagati	Capparidaceae	Liana	Dry regions	Unripe fruit	Vegetable
24.	<i>Caralluma fimbriata</i> Wall.	Shenguli	Asclepiadaceae	Herb	Dry regions in bushes	Stem	Raw
25.	<i>Carissa carandas</i> L.	Karvand	Apocynaceae	Shrub	Dry, semi- evergreen forest	Leaves, fruits	Chutney, Raw
26.	<i>Carthamus tinctorius</i> L.	Kardi	Asteraceae	Herb	Cultivated fields	Leaves	Vegetable
27.	<i>Cassia tora</i> L.	Chakramrda	Caesalpinaceae	Herb	Wastelands	Young leaves, seeds	Vegetable, Coffee (Roasted Seed)
28.	<i>Celosia argentea</i> L.	Kurdu	Amaranthaceae	Herb	Cultivated fields	Leaves	Vegetable
29.	<i>Centella asiatica</i> (L.) Urb.	Mandookparni	Apiaceae	Creeper	Ditches	Leaves	Vegetable
30.	<i>Cestrum nocturnum</i> L.	Rat-rani	Solanaceae	Herb	Cultivated	Flowers	Vegetable
31.	<i>Chenopodium album</i> L.	Chakwat	Chenopodiaceae	Herb	Cultivated fields	Leaves	Vegetable
32.	<i>Cicer arietinum</i> L.	Harbhara	Fabaceae	Herb	Cultivated	Dried leaves	Vegetable
33.	<i>Cissua quadrangularis</i> L.	Hadsandhi	Vitaceae	Herb	Dry and semi evergreen forests	Stem	Vegetable
34.	<i>Coccinia grandis</i> (L.) Voigt	Tondali	Cucurbitaceae	Climber	Cultivated	Fruits	Vegetable, Rice, Raw
35.	<i>Colocasia esculenta</i> (L.) Schott	Alu	Araceae	Herb	In waste water	Rhizome, petiole, leaves	Vegetable, Wadi
36.	<i>Commelina benghalensis</i> L.	Kena	Commelinaceae	Herb	Marshy places and walls	Leaves	Pakoda
37.	<i>Cordia dichotoma</i> G. Forst.	Bhokar	Boraginaceae	Tree	Semi-evergreen forests	Fruits	Raw
38.	<i>Cordia gharaf</i> (Forssk.) Ehrenb. ex Asch.	Godan	Boraginaceae	Tree	Dry region	Fruits	Raw

39.	<i>Cucumis prophetarum</i> L.	Shenni	Cucurbitaceae	Climber	Dry region	Fruit	Vegetable
40.	<i>Cucumis setosus</i> Cogn.	Dongar mekha	Cucurbitaceae	Climber	Dry and semi evergreen patches	Fruits	Vegetable
41.	<i>Cucurbita pepo</i> L.	Lal-bhopala	Cucurbitaceae	Climber	Cultivated	Flowers, Fruits	Vegetable, Puris
42.	<i>Delonix regia</i> (Bojer ex Hook.) Raf.	Gulmohar	Caesalpinaceae	Tree	Along roadside	Petal	Raw
43.	<i>Digera muricata</i> (L.) Mart.	Ambuti	Amaranthaceae	Herb	Wastelands	Leaves	Vegetable
44.	<i>Dioscorea pentaphylla</i> L.	Shendwal-gondwal	Dioscoreaceae	Climber	Semi- evergreen patches in monsoon only	Inflorescence	Vegetable
45.	<i>Diospyros melanoxylon</i> Roxb.	Temre	Ebenaceae	Tree	Dry deciduous forest	Fruit	Raw
46.	<i>Elaeagnus conferta</i> Roxb.	Nerle	Elaeagnaceae	Climber	Evergreen patches on boundaries	Fruit	Raw
47.	<i>Ensete superbum</i> (Roxb.) Cheesman	Ran-keli	Musaceae	Herb	In evergreen forests on rock crevices	Leaves	Vegetable
48.	<i>Ficus benghalensis</i> L.	Wad	Moraceae	Tree	Roadsides	Fruit	Raw
49.	<i>Ficus racemosa</i> L.	Umber (Dodi)	Moraceae	Tree	Near temple	Unripe fruit	Vegetable
50.	<i>Ficus religiosa</i> L.	Pimpal	Moraceae	Tree	Temple and roadside	Fruits	Raw
51.	<i>Garcinia indica</i> Choisy	Kokum	Clusiaceae	Tree	Konkan region	Fruit	Sharabat, condiments
52.	<i>Grewia tiliifolia</i> Vahl	Dhaman	Tiliaceae	Tree	Dry and semi evergreen forest	Fruit	Jam
53.	<i>Hibiscus asper</i> Hook. f.	Ambadi	Malvaceae	Herb	Cultivated	Leaves, Inflorescence	Vegetable, Jam
54.	<i>Hibiscus sabdariffa</i> L.	Lal- Ambadi		Herb		Inflorescence	
55.	<i>Holoptelea integrifolia</i> Planch.	Papadi	Ulmaceae	Tree	Semi-evergreen patches	Fruits	Vegetable
56.	<i>Launaea procumbens</i> (Roxb.) Ramayya & Rajagopal	Pathri	Asteraceae	Herb	Cultivated fields	Leaves	Vegetable
57.	<i>Limonia acidissima</i> L.	Kavath	Rutaceae	Tree	Bunds of field in dry areas	Fruit	Raw
58.	<i>Meyna laxiflora</i> Robyns	Aalu	Rubiaceae	Tree	Semi and evergreen forests	Fruit	Raw
59.	<i>Momordica charantia</i> L.	Karle	Cucurbitaceae	Climber	Cultivated	Fruit, Seed	Vegetable
60.	<i>Momordica cymbalaria</i> Fenzl ex Naudin	Kadvanchi	Cucurbitaceae	Climber	In cultivated fields	Fruit	Vegetable
61.	<i>Momordica dioica</i> Roxb. ex Willd.	Kartuli	Cucurbitaceae	Climber	Cultivated fields	Unripe fruit	Vegetable
62.	<i>Moringa ovalifolia</i> Dinter & Berger	Shevaga	Moringaceae	Tree	Bunds of fields	Flowers, Leaves	Vegetable
63.	<i>Murraya koenigii</i> (L.) Spreng.	Kadipatta	Rutaceae	Tree	Cultivated	Leaves	Spices, Chutney
64.	<i>Musa paradisiaca</i> L.	Keli	Musaceae	Herb	Cultivated	Flower	Vegetable
65.	<i>Opuntia elatior</i> Mill.	Phadya nivdung	Cactaceae	Herb	Roadsides in dry regions	Fruit	Raw
66.	<i>Oxalis corniculata</i> L.	Ambushi	Oxalidaceae	Herb	Waste marshy places	Leaves	Vegetable
67.	<i>Passiflora edulis</i> Sims.	Krishnakamal	Passifloraceae	Climber	Cultivated	Fruit	Sharabat
68.	<i>Peucedanum graveolens</i> (L.) C.B. Clarke	Shepu	Apiaceae	Herb	Cultivated	Leaves	Vegetable
69.	<i>Phoenix sylvestris</i> (L.) Roxb.	Shindi	Arecaceae	Tree	Dry regions	Fruit	Raw
70.	<i>Phyllanthus reticulatus</i> Poir.	Nili	Euphorbiaceae	Tree	Dry regions on field boundaries	Fruit	Raw
71.	<i>Phyllanthus emblica</i> L.	Amala	Euphorbiaceae	Tree	Cultivated	Fruit	Raw, Candy
72.	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Vilayati chinch	Mimosaceae	Tree	Cultivated	Aril	Raw
73.	<i>Portulaca oleracea</i> L.	Ghol	Portulacaceae	Herb	Cultivated fields	Leaves	Vegetable
74.	<i>Portulaca quadrifida</i> L.	Chighal	Portulacaceae	Herb	Cultivated fields	Leaves	Vegetable
75.	<i>Psophocarpus tetragonolobus</i> (L.) DC.	Choudari Sheng	Fabaceae	Climber	In cultivated and waste places	Fruit	Vegetable
76.	<i>Rotheca serrata</i> (L.) Steane & Mabb.	Bharangi	Lamiaceae	Herb	Semi-evergreen patches on boundaries	Young leaves	Vegetable
77.	<i>Rumex elongatus</i> Guss.	Chuka	Amaranthaceae	Herb	Cultivated fields	Leaves	Vegetable
78.	<i>Salacia chinensis</i> L.	Saptarangi	Celastraceae	Tree	Evergreen forests	Fruit	Raw
79.	<i>Semecarpus anacardium</i> L. f.	Bibba	Anacardiaceae	Tree	Dry deciduous and semi-evergreen patches	Fruit	Raw, Vegetable
80.	<i>Sesbania grandiflora</i> (L.) Pers.	Hadaga	Fabaceae	Tree	Dry regions on field bunds	Flowers	Vegetable

81.	<i>Solanum anguivi</i> Lam.	Chichurde	Solanaceae	Shrub	Waste places	Fruit	Vegetable
82.	<i>Syzygium cumini</i> (L.) Skeels	Jambhul	Myrtaceae	Tree	Cultivated	Fruit	Raw
83.	<i>Tamarindus indica</i> L.	Chinch	Fabaceae	Tree	On field bunds	Fruit	Chutney, Condiments
84.	<i>Trachyspermum ammi</i> (L.) Sprague	Ajmoda	Apiaceae	Herb	Cultivated	Leaves	Pakoda
85.	<i>Tribulus terrestris</i> L.	Sarata	Zygophyllaceae	Herb	Dry regions at all places	Leaves	Vegetable
86.	<i>Vigna mungo</i> (L.) Hepper	Udid	Fabaceae	Climber	Cultivated	Leaves	Vegetable
87.	<i>Vigna unguiculata</i> (L.) Walp.	Chawali	Fabaceae	Climber	Cultivated	Leaves	Vegetable
88.	<i>Woodfordia fruticosa</i> (L.) Kurz	Dhayati	Lythraceae	Shrub	Forests boundaries	Flowers	Nectar
89.	<i>Ziziphus rugosa</i> Lam.	Toran	Rhamnaceae	Climber	Semi and evergreen forests	Fruit	Raw
90.	<i>Zizyphus mauritiana</i> Lam.	Bor	Rhamnaceae	Shrub	Dry forest on boundaries	Fruit	Raw

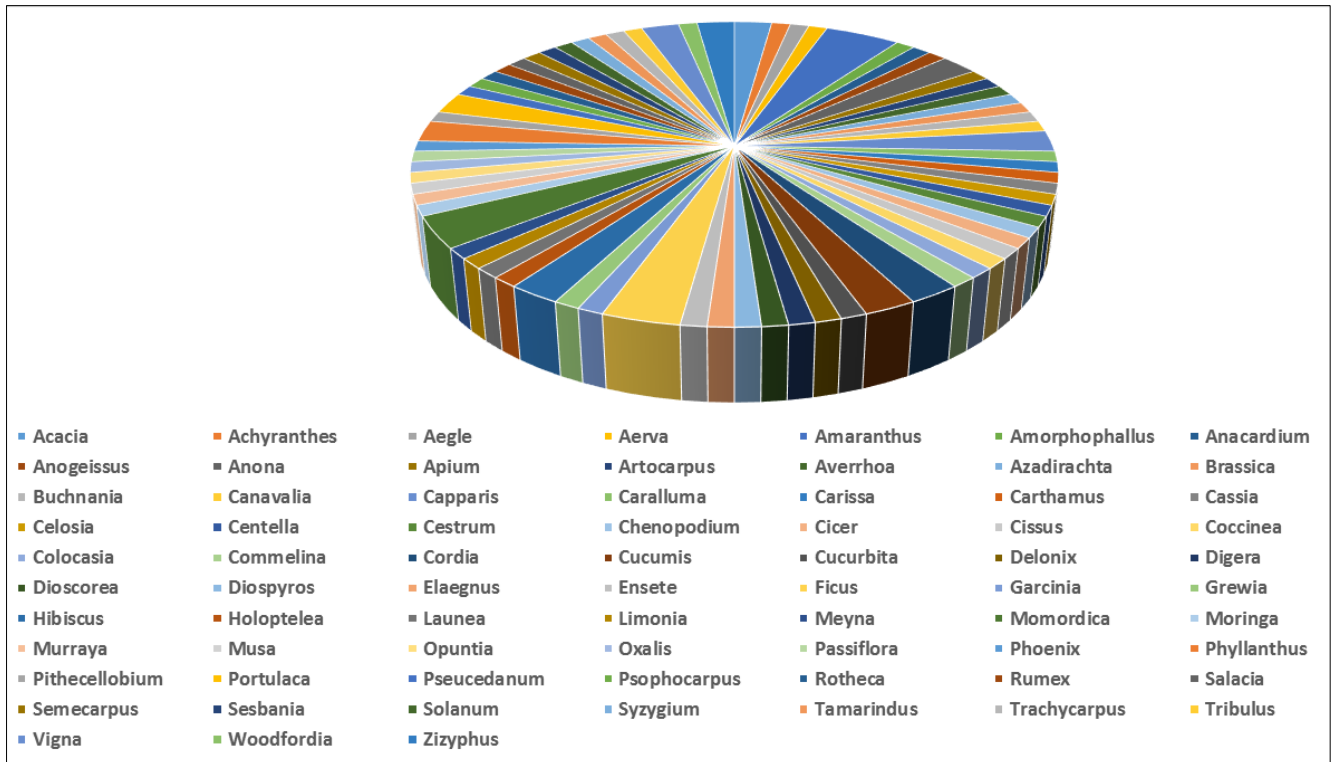


Fig 1: Number of edible species in different genera

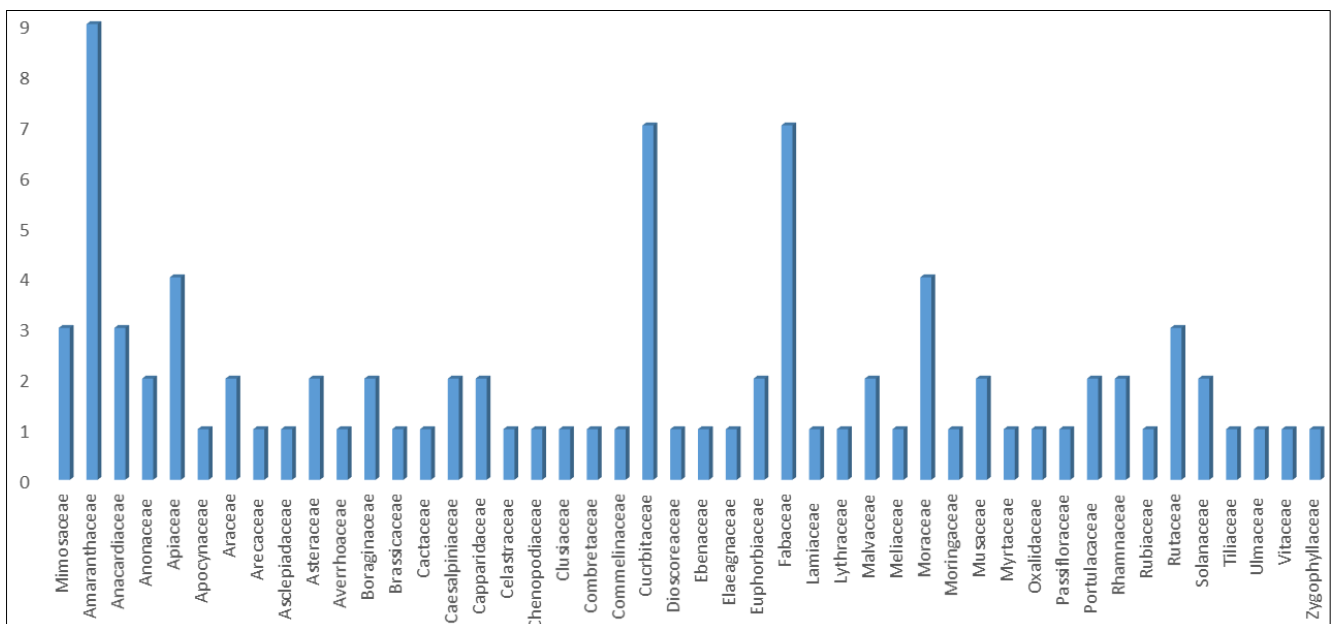


Fig 2: Distribution of species in different families

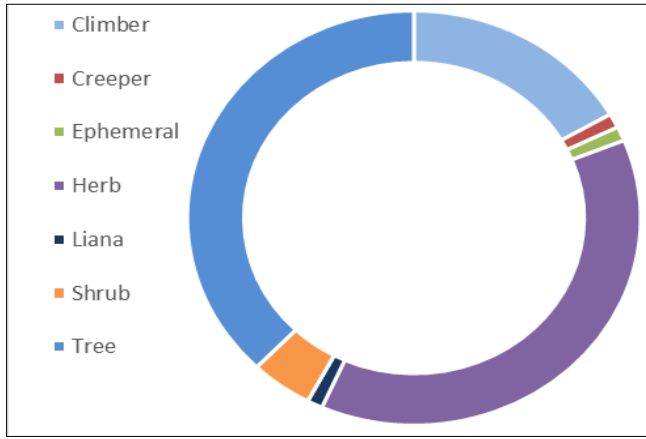


Fig. 3: Habit wise distribution of taxa

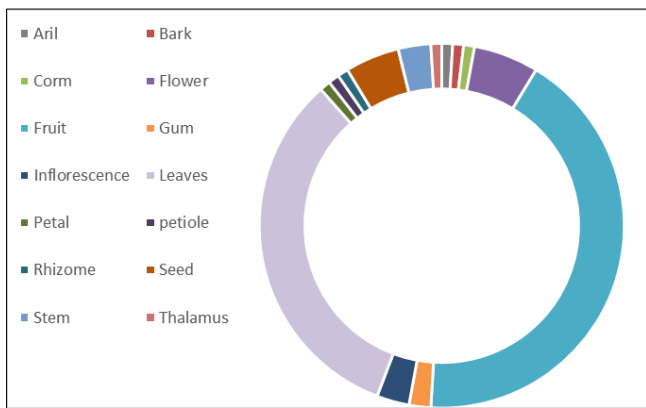


Fig 4: Different plant part of consumed in different species

5. Acknowledgement

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