



Investigation of ethnic wild vegetables of Mahurgad forest, district Nanded, Maharashtra, India

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ABSTRACT

This investigation was conducted in Mahur forest, district Nanded and studied on natural edible plants of Mahur forest. To collection of information using quadrat method, create quadrates on some selected villages of Mahur tahasil. Preserving knowledge about edible plant from local informants, elder people, hiller, vegetable seller, middle-aged people; taking with them structure and semi structural interview and informal meeting. Collect information in local name, parts use, health benefit, recipes and their harvesting session. In this investigation collecting 35 edible plants belong to 17 family. The present study is emphasizing the need for conservation of these valuable species and combine them in to modern agricultural and dietary systems for enhancing health condition and environmental sustainability.

Keywords: Edible's plant, wild fruits, Mahur forest, tribal knowledge, nutrition, environmental sustainability.

INTRODUCTION

India is diversity rich country in which presents of huge biodiversity centres form out of 17 centres (Rewatker 2020) its slightly cover 712249 sq. km. (21.67 of terrestrial area of India) cover by forest (ISFR, 2019; Rintelen et.al., 2017). In India, majority up to 70% of population are inhabited in rural area, their main source of income is depended on forest, near about 170 million of peoples living around or between the forest. The endemic rural community depends on forest-based products in medicines, wild vegetable, fruits, fuel, fodder, woody and non-wood forest product (Arora and Ramawat, 2014).

Near about 700 plants across the world are harvesting wild vegetable, fruit, medicinal purpose form wild vegetation (Ghane et. al., 2010). Endemic important knowledge of traditional wild vegetable, wild fruits and crops their survival method of Tribes and rural people have just recently been recognized by research, (Voster et.al., 2007), Because of lack of knowledge of wild vegetables and fruits are critical to understand the important of wild weeds, that one of the regions for most of wild flora are at point of extinction or threaten categories. Most of valuable information regarding traditional vegetable area loss, that urgent need to



Fig 1: Local vegetable seller of Mahur forest

conserve knowledge of traditional cultural vegetable & fruits is important. Across the world 50% plant species endemic in 34 global biodiversity hotspots, which cover 15.7 % terrestrial area of earth, currently its reduced to 2.3% which consist of huge number of endemic species such as at risk of extinction, according to ICUN (1998) red data list of threatened plant, currently more than 8000 species listed (IUCN 2010).

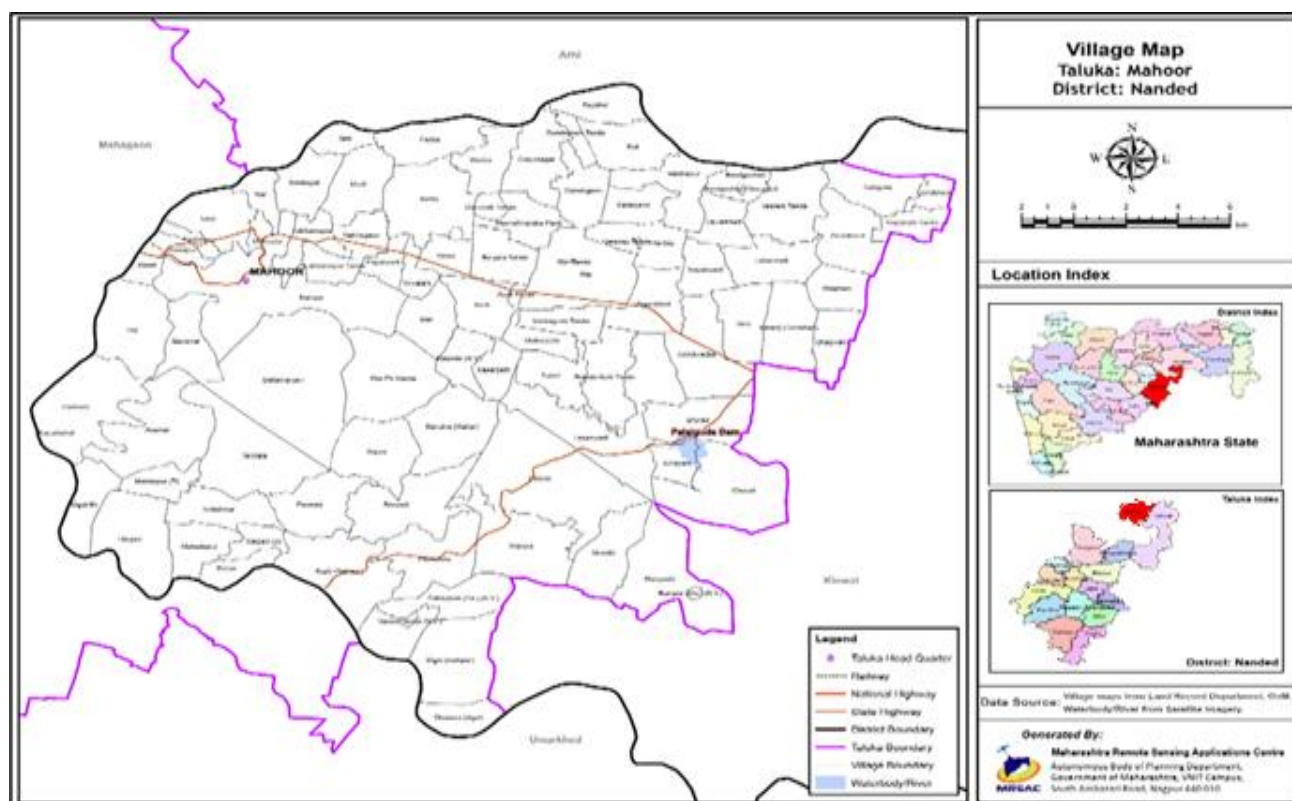
Wild species could be greater potential source for different flavour, colours, medicine purpose and also source of diet supplement (Sanchez et.al,2011). Create documentation of endemic wild vegetable is necessary also for toxicological perspective (Mithril & Dragsted, 2012). According to food agriculture organization (FAO) report, at least one billion people use wild food in diet. Contenting rich source of natural value in many wild edible plant (Wehmeyer & Hussain, 2009). In India endemic tribal communities utilize 9500 plants for their livelihood for several purpose from which 3900 plant use as edible (Anonymous, 1995) exposer of wild edible plant are rich source of protein, fats and nutrients (micro-macro) and trace elements (Nilegaonkar et.al,1985). Certain wild flora in which leafy vegetable, fruits, medicinal plant are precursor for modern crop that's why is necessary to conserve and use suitable for hopeful future, wild vegetable are environmental gift for human communities they don't have any special requirement for growth (Swapnaja et.al,2019). Endemic local tribal and rural communities have greater and accurate knowledge about wild food resource, because of longer association environment (Jain & Sinha 1988). Recent investigation find out wild flora have greater potential

benefit for human health, show in different studies investigation of nutrient composition of certain vegetable mediterranean country such as Italy (Salvatore et.al 2005), in Spain (Guil et.al,1997)/ Portugal (Barros et.al, 2010).

Mahur forest residing in Nanded District, it is treasure of biodiversity, present of diverse type of wild edibles vegetables and fruits. In this forest located indigenous tribal communities and religion people have traditional knowledge of edible wild flora found in there surrounding mahur forest area. These plant play important role in health benefit of tribal population. Even significant, scientific documentation of wild edible plant species till the time limited. The present study deals with understanding nutritional composition, medicinal value and sustainable harvesting is essential for biodiversity conservation and securing traditional knowledge.

MATERIALS AND METHOD

Research are regulated on Mahur forest range, Mahur Tahasil is situated between 19 °49 to 19 °83 Northern latitude and 77 °91 to 77 °55' East longitude, when we are seeing geographical area of Mahur Tahasil is 55160 hectares of which 14397.39 hectares are covered with forest and 37762.62 hectares are non-forest area in population is 86782. Fig 1.1(Vijigiri and Benbrekar, 2015), out of this 15.5 percent is inhabited local tribal people in Andh, Kolam, Niked, Pradhan and Gond. Also, near located of Painganga wildlife sanctuary.



Map of Mahur taluka fig 1.2(<https://www.mrsac.gov.in>)

Mahur tehsil present of 92 villages in some villages are reside in core forest region, collection of plant information using quadrate method (Wankhade,2017). Creates quadrate on some selected villages, where present of rural and tribal communities and plant informer can stay. Using sampling method (probabletic samplings), conducted with local informants, elder people, heller, vegetable seller, middle-aged people. Gathering structure and semi structural interview and informal meeting. Collect information in local name, plant parts of use, health benefit, recipes and there harvesting session. Field visits were organized with these informants to observe and document plant identification, method of harvesting.

RESULTS & DISCUSSION

In this investigation, field of Mahur forest presence of diver's type of wild vegetable flora. In this research study 35 wild flora are belongs to 17 family (Table 1). Out of this plant different parts use as vegetable like flower, fruit, hole plant and some plant leaves. ex. *cassia fistula*, *Cordia dichotoma* its flowers are use as

vegetable. *Merremia emarginata*, *Amaranthus retroflexus*, *Ameranthus tricolor*, *Hibiscus sabdariffa*, *colacesia esculenta*, *Achyranthes aspera*, *Cassia tora*, *Boerhavia diffusa*, *Physalis onglata*, *Portalaca oleraceae*, *Amaranthus viridis*, *Taraxacum dissectum*, *Amaranthus blituem*, *Celosia argentea*, *Moringa oleifera* its leaves are used as vegetable. *Cucamis sativas*, *Luffa actangula*, *Vigna trilobata*, *Hibiscus sabdavifa*, *Momardica dioica*, *Abelmoschus esculentus*, *Vigna linguiculata*, *Brassica oleracea*, *Solanum melangena*, *Luffa cylindrica*, *Monordica charantia*, *Dregea volubilis*, *Citrus medica*, *Carthamus tinctorius*, *Lufa cylindrica*, *L.aegyptiaca*, *Limona acidissima*, *Carthamus tinctorius*, *Garcinia schomburgkiana pierre*, *Raphanus sativus* there fruit are use as vegetable or in the form of fruit . Endemic communities that plant used as a traditional food source. Various plants are uses in their diet and medicinal treatment play important role. Some of wild vegetable are found in particular session like rainy and winter session found in large number. Form this investigation studied wild vegetable, fruit and some other plants are important for sustainable conservation of biodiversity. They play a valuable role in the nutritional security and health promotion of the local communities.



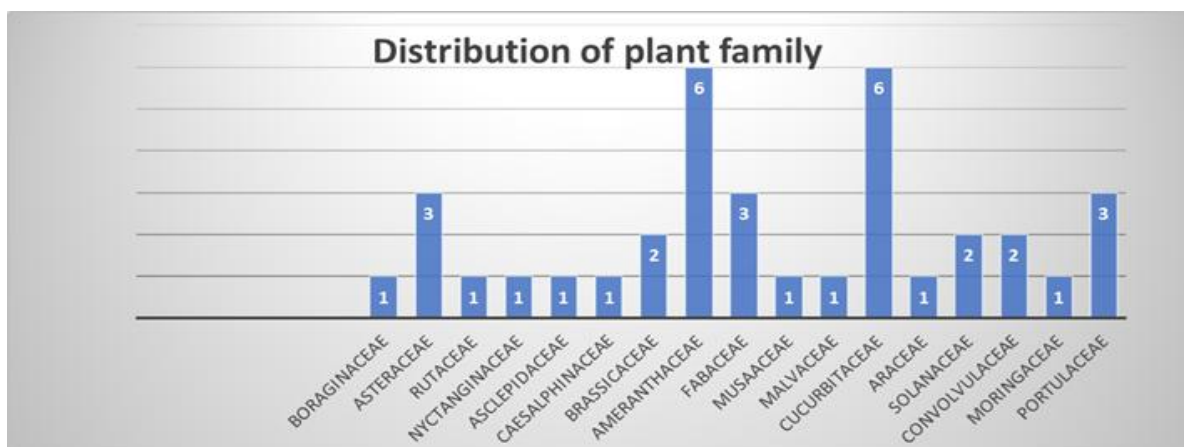
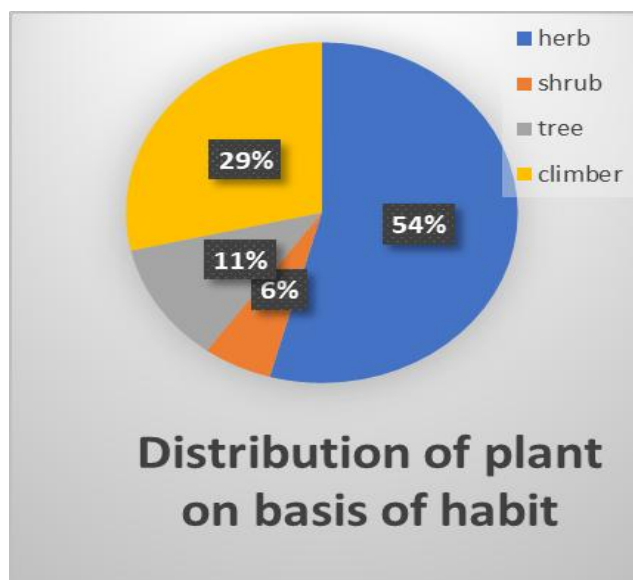
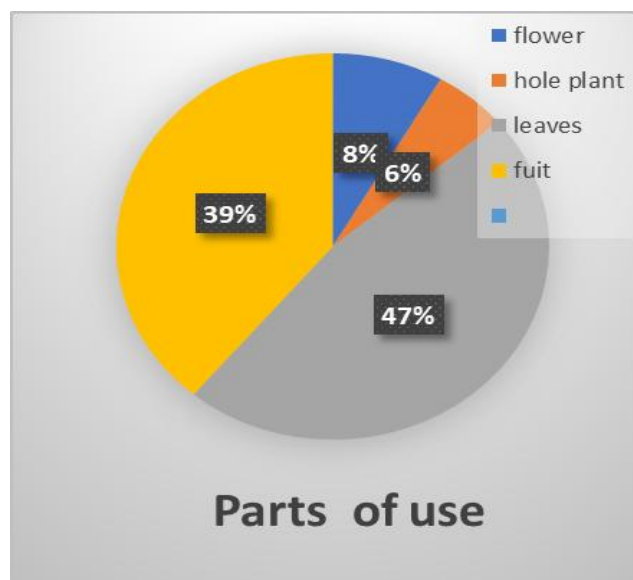
Plant picture fig.1.3., 1) *Cucumis sativas*, 2) *Luffa cylindrica* L. *aegyptiaca*, 3) *Amaranthus blitum*, 4) *Amaranthus tricolor*, 5) *Celosia argentea*, 6) *Hibiscus sabdariffa*, 7) *Merremia emarginata*, 8) *Vigna trilobata*, 9) *Vigna trilobata*, 10) *Musa paradisiaca*, 11) *Momordica dioica* Roxb, 12) *Colocasia esculenta*, 13) *Vigna linguiculata*, 14) *Carthamus tinctorius*, 15) *Argyrea nervosa*, 16) *Brassica oleracea*, 17) *Luffa cylindrica*, 18) *Dregea volubilis*, 19) *Physalis oleracea*, 20) *Monardella chorisandra*, 21) *Acahuanthus aspera*, 22) *Portulaca quadrifida* L., 23) *Cassia fistula*, 24) *Amaranthus viridis*, 25) *Taraxacum dissectum*, 26) *Boerhavia diffusa*, 27) *Raphanus sativus*.

Table 1: wild edible plant use by the tribes Mahur ,Dist. Nanded

Sr no.	Botanical name	Local name	Family	Habit	Edible part	Harvesting session	Use as
1.	<i>Portulaca quadrifida</i> L Mant.	Chhoti dudhi	Portulacaceae	Herb	Hole plant	Rainy session	Vegetable, shup
2.	<i>Moringa oleifera</i> Lamk.	Mungoni, shevga	Moringaceae	Tree	Leaves,	Winter to summer	Vegetable
3.	<i>Merremia emarginata</i> (Burm f.) Hall f.	Bhokran	Convolvulaceae	Herb	Leaves	Rainy to winter	Vegetable
4.	<i>Musa paradisiaca</i> L.	Kela ful	Musaceae	Shrub	Flower	summer	Vegetable
5.	<i>Cucumis sativus</i> L.	Sherni	Cucurbitaceae	Climber	Fruit	Rainy to winter	Vegetable
6.	<i>Luffa acutangula</i> (L.) Roxb.	Dodki	Cucurbitaceae	Climber	Fruit	Rainy to winter	Vegetable
7.	<i>Vigna trilobata</i> (L.) Verdcourt	Ran mung	Fabaceae	Climber	Fruit	Winter to Early summer	Vegetable
8.	<i>Amaranthus hybridus</i> L.	Rajgira	Amaranthaceae	Herb	Leaves	winter	Vegetable
9.	<i>Amaranthus tricolor</i> L.	Lalmath	Amaranthaceae	Herb	Leaves	winter	Vegetable
10.	<i>Hibiscus sabdariffa</i> L.	Ambadi	Malvaceae	Herb	Leaves, fruit	Rainy to winter	Vegetable
11.	<i>Momordica dioica</i> Roxb. ex Willd	Katula	Cucurbitaceae	Climber	Fruit	Rainy to winter	Vegetable
12.	<i>Colocasia esculenta</i> (L.) Schott	Chamkura	Araceae	Herb	Leaves	winter	Vegetable
13.	<i>Vigna unguiculata</i> (L.) Walp.	Barbati	Fabaceae	Climber	Fruit	Winter to Early summer	Vegetable
14.	<i>Brassica oleracea</i> L.	Gobhi	Brassicaceae	Herb	Fruit	Winter	Vegetable
15.	<i>Solanum melongena</i> L.	Vangi	Solanaceae	Herb	Fruit	Winter to summer	Vegetable
16.	<i>Luffa cylindrica</i> (L.) Roem.	Ghoshi dodka	Cucurbitaceae	Climber	Fruit	Rainy to winter	Vegetable
17.	<i>Cassia tora</i> L.	Tarotha	Caesalpiniaceae	Herb	Leaves	Rainy to winter	Vegetable
18.	<i>Momordica charantia</i> L.	Karli	Cucurbitaceae	Climber	Fruit	Rainy to winter	Vegetable
19.	<i>Dregea volubilis</i> (L. f.) Venth. ex Hook. f.	Ekdodi	Asclepiadaceae	Climber	Fruit	Rainy to winter	Vegetable
20.	<i>Boerhavia diffusa</i> L.	Punarnava, panfuthi	Nyctaginaceae	Herb	Leaves	Rainy to winter	Vegetable, supe
21.	<i>Physalis angulate</i> L.	Futkuli	Solanaceae	Herb	Leaves	Winter to summer	Vegetable
22.	<i>Citrus medica</i> Hook.	Suilimbu	Rutaceae	Tree	Fruit	Winter to summer	Sharbat
23.	<i>Luffa cylindrica</i> L. Roem.	Chopdi dodki	Cucurbitaceae	Climber	Fruit	Rainy to winter	Vegetable
24.	<i>Portulaca oleracea</i> L.	Ghol	Portulacaceae	Herb	Leaves	Rainy session	Vegetable
25.	<i>Cassia fistula</i> L.	Ballaha	Fabaceae	Tree	Flower	Winter to Early summer	Vegetable
26.	<i>Amaranthus viridis</i> L.	Hari math, Kunjar	Amaranthaceae	Herb	Leaves	winter	Vegetable
27.	<i>Taraxacum dissectum</i> Ledeb.	Patri	Asteraceae	Herb	Leaves	Winter to summer	Vegetable
28.	<i>Amaranthus bilitum</i> L.	Tanduljira	Amaranthaceae	Herb	Leaves	winter	Vegetable
29.	<i>Cordia dichotoma</i> Forst.	Gondhan	Boraginaceae	Tree	flower	Summer to winter	Vegetable

Table 1: wild edible plant use by the tribes Mahur ,Dist. Nanded

Sr no.	Botanical name	Local name	Family	Habit	Edible part	Harvesting session	Use as
30.	<i>Carthamus tinctorius</i> L.	Kardi	Asteraceae	Herb	Fruit	Winter to summer	Edible oil
31.	<i>Celosia argentea</i> L.	Kardu	Amaranthaceae	Shrub	Leaves	Winter	Vegetable
32.	<i>Potulaca quadrifida</i> L. Mant.	Chival bhaji	Portulacaceae	Herb	Hole plant	Rainy session	Vegetable
33.	<i>Achyranthes aspera</i> L.	Aghada	Amaranthaceae	Herb	Leaves	Rainy to winter	Vegetable
34.	<i>Argyreia nervosa</i> (Burm. f.) Boj.	Samudravell	Convolvulaceae	Climber	Leaves	Rainy to winter	Vegetable
35.	<i>Raphanus sativus</i> L.	Muli sheng	Brassicaceae	Herb	Fruit	Winter to summer	Vegetable

**Graph 1.1., Distribution of plant family****Graph 1.2, Based on habit distribute plants****Graph 1.3., Parts use as vegetable****CONCLUSION**

In this investigation defined in Mahur forest present of diverse type of wild vegetable. These plants were classified based on their habit, including herbs, shrubs, trees, and climbers. Endemic and rural population Thies plant use for their diet, traditional purpose and important for livelihood of local communities. In different plants also contain vital medicinal and bioactive compound it will be important in term of food security and pharmaceutical research. But due to the modernization, traditional knowledge are gradually decreases, there for documentations, conservation and special attention need to be paid to sustainable uses.

Conflict of interest

The authors declare no competing interests.

Data Availability Statement: Not applicable.

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