



Ethnobotanical Investigation on Wild Edible Vegetables used by Thane Residents

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Abstract

A field research study was conducted in the years 2020–21. This type of comprehensive survey technique could help aspiring scientists learn about the health benefits of wild edible plants, which can then be combined to create profitable crop plants. The reduction of food shortages, the regeneration of barren regions and the strengthening of rural economies will get benefitted from such a system. A total of 23 wild edible plant species from 18 families and 20 genera were discovered, identified and discussed in this study. The botanical names of plants, as well as their common names, habits, families, parts used, modes of uses, ethnomedicinal applications and tribal recipes are arranged alphabetically. With three species Amaranthaceae followed by Dioscoreaceae and Malvaceae with two species and the rest with one species each. Leaves (09), followed by fruit (06), tuber (04), stalk (02) and the rest with one species each, were the most commonly used among 23 wild edible plants.

Keywords: wild vegetables, tuber, ethnobotany, traditional knowledge, healers.

Introduction

The term "wild edible plants" refers to plants that can be used as food if collected at the appropriate stage of growth and properly utilized. (Kallas, 2010). WEPs (wild edible plants) are species that are not farmed or domesticated but are available in their native habitat and exploited as food sources (Beluhan and Ranogajec, 2010). Wild edible plants have played an essential role in human life from ancient times; they have been utilized for food, medicine, fiber and other purposes, as well as feed for domestic animals (Kanchan, 2011). Several studies have revealed that wild edible plants are a possible source of nutrients and are often more nutritious than conventionally consumed crops. (Grivetti and Ogle, 2000).

Wild edible plants serve an important role in providing food for poor rural populations, particularly tribal people who live near woodlands. Forest dwellers'/tribal populations' subsistence methods rely heavily on wild food plants. While these plants are not widely

available, though they are important for nutrition and food security in many countries, including China, India, Southeast Asian countries, Africa and Australia. Several wild edible plants are consumed alongside domesticated in many countries, including China, India, Southeast Asian countries, Africa and Australia (Mazhar et al., 2007). Edible wild plants have always been used as the first food source, providing the necessary energy for human growth, development and reproduction (Rai et al., 2012).

Forests play a vital role in ensuring tribal food security. Forest dwellers' livelihood methods rely heavily on wild edible fruits as a source of nourishment. India has a large forest region and more than 4 million tribal people rely on wild edible plants.

The monsoon season is when uncommon wild foods are most plentiful. From July through September, these vegetables can be found in abundance in forests, along hill slopes, near river banks, surrounding ponds and in and around their hamlets, where cow dung is plentiful. During the first two months of the monsoon, most wild vegetables are available for good development. Though most wild vegetables are available to tribals during the first two months of the monsoon, due to high demand at the local taluka market, just a handful are left behind for their family members. The uncommon wild vegetables bring in extra money for the tribals because of their ethnomedicinal worth (Pant, 1996).

Earlier work on wild edible plants from many parts of Maharashtra like Amravati, Konkan, Thane and Palghar was carried out by Bhogaonkar et al., (2010), Khan & Kakde, 2014; Khyade et al., 2009; Majumdar et al., 2009; Satvi and Marathe, 2018, Oak et al., 2014 Palekar, 1993.

The current research was designed to describe the variety of wild vegetables consumed by urban residents in the Thane.

Materials and Methods

Collection of wild vegetables

Frequent monthly visits were arranged and collected wild edible vegetables from Thane Market areas, Villagers, farmers and small vegetable sellers and brought in the

laboratory for further study.

Plant identification:

Specimens were identified using standard procedures and Flora of Gujarat with supporting information for ethnomedical uses (Almeda, 2003, Cook, 1965, Jain & Rao, 1977) and (Naik, 2004; Shah, 1978). Tribes were interviewed to learn about local vegetable names, habits, habitats and their ethnobotanical uses.

Results and Discussion

Tribes eat a variety of green plants that grow wild, such as weeds according to the findings of this study. Forests are rich in wild vegetable species with substantial potential for human use, benefiting the local economy and livelihoods of many people.

A total of 23 wild edible plant species from 18 families and 20 genera were discovered, identified, discussed in this study and shown in table no.1. The botanical names of plants, as well as their common names, habits, families, parts used, modes of use, ethnomedicinal applications and tribal recipes, are arranged alphabetically. With three species Amaranthaceae followed by Dioscoreaceae and Malvaceae with two species and the rest with one species each. Leaves (09), followed by fruit (06), tuber (04), stalk (02) and the rest with one species each, were the most commonly used among 23 wild edible plants.

This study found that 98 percent of the plants reported had medicinal characteristics and are often utilized for basic ailments like coughs, asthma, stomach problems, skin infections, urine and so on. According to the market survey, locals value twenty-three wild edible plants, which are commonly sold in local markets or even transferred to larger markets nearby. The selling price of these plants was compared between the remote Thane district market and Thane town and it was observed that once they reach urban regions, the selling price doubles or triples. According to studies, several of these wild edible plants are only found in rural areas and are not widely available in urban markets.

The results of ethnomedicinal wild vegetable plant research in Thane are beneficial and interesting. Ethnobotany has become an increasingly significant subject as people's perceptions of plant utilization have changed. In different sections of the country, traditional healers are called by different names. The conclusions of the current study are based on interactions with residents in the Thane district. It's worth noting that the tribe's understudy has a broad understanding of ethnobotany, according to the current study.

Similar types of study done by many researchers Bhogaonkar et al., 2010, Marathe, 2012, Khan and Kakde, 2014, Khyade et al., 2009, Setiya et al., 2016, Chothe et al., 2014. Oak et al., 2014, Palekar, 1993, Rai et al., 2004 and Kulkarni et al., 2003. Eating enough wild vegetables,

according to a review of the literature, can help you avoid chronic diseases like cancer, obesity, diabetes, cardiovascular disease and metabolic syndrome.

Table.1. List of wild edible vegetable plants with ethnobotanical uses

Sr. no.	Botanical name	Local name	Family	Parts used	Ethnobotanical uses
1	<i>Abelmoschus ficulneus</i> (L.) Wight and Arn.	Ranbhen di	Malvaceae	Fruits used as a vegetable	About spoonful powder of seeds is given at night for three days to cure abdominal pain or gastric problem
2	<i>Aegle marmelos</i> (L.)	Bei	Rutaceae	Fruit	A spoonful pulp of the fruit is given along with cow milk twice a day for three days to cure dysentery
3	<i>Amaranthus spinosus</i> L.	Kateri math	Amaranthaceae	Leaf used as a vegetable	Boiled with pulses, it is also fed to cattle to increase the yield of milk. The root is used for the treatment of bronchitis, asthma, skin diseases and poisonous stings. Leaves are used as a poultice
4	<i>Amaranthus paniculata</i> L.	Rajgura	Amaranthaceae	Leaf used as a vegetable	It is used in the treatment of constipation, piles and anemia
5	<i>Amaranthus viridis</i> L.	Math	Amaranthaceae	Leaf used as a vegetable	It is used in the treatment of urine troubles and skin diseases. It is used as a vegetable by the poor. It is also given to the cattle during scarcity
6	<i>Amorphophallus yvaticus</i> Roxb Kunth	Jangli suran	Araceae	Corm, tender petiole vegetable	About 25 gm of the freshly fried corm is consumed twice a day for six days as a tonic or as an energetic
7	<i>Bambusa arundinacea</i> L.	Bamboo comb	Gramineae (Poaceae)	Tender Shoots Cooked as a vegetable	Bambusa leaves, branches and seeds are employed as astringents and laxatives in traditional medicine. The tender shoot acts as energetic
8	<i>Basella alba</i> L.	Ran palak	Basellaceae	Leaves used as a vegetable	The pulped or bruised leaves are used as a poultice. The juice of leaves is prescribed in cases of constipation, particularly in children and pregnant women. The leaves are diuretic, demulcent and useful in gonorrhoea
9	<i>Capparis zeylanica</i> L.	Waghate	Capparaceae	Fruits used as a vegetable	Unripe fruits are consumable good for stomach relief
10	<i>Carthamus tinctorius</i> L.	Kardai	Asteraceae	Leaf used as a vegetable	Paste of fresh leaves is applied to the wound
11	<i>Chenopodium album</i> L.	Chakwat	Chenopodiaceae	Leaf used as a vegetable	Used to treat throat infections. After the symptoms of chickenpox appear, that plant's juice is mixed with honey and used to make the person suffer vomiting
12	<i>Cordia dichotoma</i> G. Forst.	Bhokar	Boraginaceae	Flower used as a vegetable	Fruits are used against diarrhoea
13	<i>Dioscorea pentaphylla</i> L.	Gabholi	Dioscoreaceae	Tuber used as a vegetable	Aphrodisiac. It is said that eating a lot of flowers and vegetables can make you more attractive to other people.

14	<i>Dioscorea bulbifera</i> L.	Kadukan	Dioscoreaceae	Tuber used as a vegetable	Paste of root tuber is applied on the wound twice a day till cure. Powder of root tuber is applied along with coconut oil on the affected skin twice a day for five days.
15	<i>Hibiscus cannabifolius</i> L.	Ambadi	Malvaceae	Leaves used as a vegetable	cooked leaves with rice are given to people who have dyspepsia caused by Mahuwa oil. It is a pain reliever. If there is a problem passing urine, a decoction of seeds is given.
16	<i>Holarrhena anti-dysenterica</i> Wall.	Kuda	Apocynaceae	Pod used as a vegetable	Alkaloids with therapeutic characteristics are abundant in plant parts, especially fruits. Roots and bark are used to cure diarrhea they are anti-dysenteric drugs. It's acidic and it is good for digestion and cooling.
17	<i>Leuca macrophylla</i> Roxb.	Dinda	Vitaceae	Fruit used as a vegetable	The root tubers are astringent as well as have ethnomedical uses. Mucilage is used to treat wounds and sores because of its healing properties.
18	<i>Momordica dioica</i> Roxb.	Kartoli	Cucurbitaceae	Fruit used as a vegetable	Tuberose roots have been used in traditional medicine to treat bleeding piles, digestive issues and urinary problems.
19	<i>Moringa oleifera</i> Linn.	Shevaga	Moringaceae	Leaf and pod used as a vegetable	This vegetable is used to treat eye issues, indigestion and snake poisoning.
20	<i>Nymphaea lotus</i> Linn.	Kamal	Nymphaeaceae	Tuber used as a vegetable	The rhizome is used in the treatment of diarrhea, dysentery, general debility and cardiac issues, among other things.
21	<i>Paracalyx scariosus</i> Roxb.	Ran ghevda	Fabaceae	Fruit used as a vegetable	Ethnomedical uses include scorpion bites and leg cramps.
22	<i>Portulaca oleracea</i> L.	Ghol	Portulacaceae	Used as a vegetable	Seeds are a cooling diuretic that can be used to cure jaundice and diarrhea in traditional medicine. Burns and scalds can also be treated with them.
23	<i>Senna tora</i> L. Roxb.	Tarota	Fabaceae	Leaf used as a vegetable	Both leaves and seeds form a valuable remedy for skin diseases.

Conclusion

With rising population pressure, people will be forced to rely on wild edible plant resources as an alternative to conventional ones shortly, to meet rising food demand and nutritional requirements. As a result, plant resources are critical in resolving a variety of issues such as shelter, food and medicine. Aside from that, several of these wild foods have a high cultural value among the locals and are thus linked to their indigenous customs. Several anthropogenic and natural factors, including land-use change, habitat degradation, over-harvesting, over-grazing and invasive plants, are threatening these multi-valued wild fruit resources. Effective management of these resources is critical for the well-being of local populations and biodiversity conservation and it may also help to conserve cultural and genetic variety. The most feasible preservation and livelihood approach for the coastal zone forests, which are managed by villagers and civil society organizations,

would be to include such wild edible resources in society forest management.

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