

TUNGARESHWAR: REPOSITORY OF WILD EDIBLE AND MEDICINAL PLANTS

SHIVPRASAD D MAHADKAR¹, RUDRAKSHI B RAUT²¹Department of Botany, Dr. Shantilal Dhanji Devesy Arts College and Commerce College and Science College, Palghar, Maharashtra, India.²Department of Botany, S. D. Arts, V.S. Apte Commerce and M. H. Mehta Science College, Palghar, Maharashtra, India. Email: mshivprasad007@gmail.com

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ABSTRACT

Objectives: The objectives of this study were as follows: (1) Ethnomedicinal survey and documentation of wild edible plants from Tungareshwar through discussion with rural people as well as continuously field visits. (2) Documentation of medicinal value of wild edible plants was done by discussion with local medicine man and Vaidus.

Methods: The ethnobotanical survey was carried out in areas of Tungareshwar Devrai from June 2021 to June 2022. The data collected through discussions and interviews with experienced persons and traditional healers. The data on wild edible plants were collected using preparation of questionnaire in local language and group discussions. Voucher specimens were collected during walk with informants. The collected plants were identified using standard floras.

Results: Altogether 30 plants species belonging to 25 families were recorded. A total of 30 species of Edible Plants are documented. Out of them, 12 species are consumed as leafy vegetables, 13 are fruits/seed, two are edible tubers, two are roots, and seven species of flowers are used as a vegetable. All 30 plants documented along with their medicinal uses and food values.

Conclusion: The present work documented 30 wild edible and medicinal plants. Out of these, most of the plants have medicinal values. Further, investigation on their phytochemical and nutraceutical studies may provide better nutritional and medicinal sources for future.

Keywords: Wild edible plants, Ethnomedicinal survey, Tungareshwar, Palghar district.

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INTRODUCTION

Ethnobotany is the systematic study of the relationships between plants and people (Jain 1987). The livelihood of the rural people do not depend only on the agriculture and animal products but also on the other natural resources such as Plant and Forest [6].

Tungareshwar wildlife sanctuary also known as Tungareshwar National Park is located on a plateau east of Vasai and Virar in Palghar district, north of Mumbai in the Indian state Maharashtra. Spread over 85 sq. km it forms a corridor between Sanjay Gandhi National Park and Tansa Wildlife Sanctuary. The temperature around 35°C in April to May Tungareshwar was declared a wildlife Sanctuary in 2003. It rises to about 665 m above sea level. The Latitude of Tungareshwar Wild life sanctuary is 19.4033° N and Longitude is 72.9579° E. There are three different types of foresters Dry Deciduous, Moist Deciduous, and Semi Evergreen. In Summer, April, May, and June are the hottest months, with temperatures reaching over 35°C. Monsoon from June to September. Tribal residing in Vasai Taluka makes use of naturally available plants in their day-to-day life and for treating various ailments from generation to generation.

Wild edible plants not only provide food quantity but also make significant contribution to the population nutrition throughout the year. Besides their own consumption, selling of wild leafy vegetables, tubers, fruits, seeds, etc., in the local markets provide cash income to local communities. It is well known fact, the tribal or that people living in the forest area are dependent on the forest sources such as fuel fodder, small timber, and different type of medicinal plants, in which they use as medicine and of as nutritional resource to maintain their health and to cure from diseases and health issues.

METHODS

The present investigation was carried out in Tungareshwar Wildlife Sanctuary region of Palghar district. The geographical location of

Tungareshwar is 19°24'59.4"N 72°54'05.4"E. The ethnobotanical surveys were carried out in Tungareshwar area. Furthermore, interactions and discussions were made with the local villagers visited local markets of near villages, namely, Sativli, Majivali, Parol, Usgaon, and Kuwarpada. The data recorded through discussions and interviews with experienced persons and traditional healers. Data on wild edible and medicinal plants were collected using preparation of questionnaires in local language and group discussions. At the same time plants, species were collected during walk with informants. The collected plant was identified using standard floras [2,4,7].

RESULTS

The study area is floristically rich and includes various useful wild edible plants. All plants are arranged alphabetically in the tabular form followed by families, Vernacular name Seasonal availability, plant parts used, and method of consumption (Table 1). Some wild plants having dual significance food values as well as medicinal values in rural areas [3]. In the present study, total 30 plants have been selected from the Tungareshwar Wildlife Sanctuary some of which leaves, flowers, fruits, seed, inflorescence, tubers, and bulbils are mainly used for consumption. Percent contribution of different parts of plants used indicated that fruits/seeds of majority of species are edible (36%), leafy vegetables contributed (33%), flowers contributed 19%, and tuber contributed 6%, while roots contributed 6% (Fig. 1). Fruits are mostly consumed raw and leafy vegetables are cooked, boiled, or fried. Plate 1 indicates some wild edible plants.

DISCUSSION

Wild edible plants provide food and nutrients to local communities, such as essential amino acid, various vitamins, and minerals which are needed to keep healthy and enhance immunity against diseases and infections. During this project work, it was observed that uses of these plants gradually decreasing. Due to lack of interest among the younger

Table 1: List of some wild edible and ethnomedicinal plants in Tungreshwar Wildlife-sanctuary, Vasai Taluka, Palghar district, Maharashtra

S. No.	Botanical name	Vernacular name	seasonal Availability	Edible part	Medicinal uses	Method of consumption
1.	<i>Ipomoea carnea</i> Jacq. Family: <i>Convolvulaceae</i>	Beshram	Throughout year	Leaves	Roots and leaves are pounded and applied to snakebites, and an infusion is drunk. A fresh leaf decoction is drunk to treat general body pain	Leaves-cooked and eaten as a vegetable
2.	<i>Acalypha indica</i> L. Family: <i>Euphorbiaceae</i>	Kupi	June-December	Shoots and Leaves	Dried plant is used in curing bronchial asthma, Pneumonia and rheumatism. Fresh leaves used in treatment of ulcers	Shoots and leaves are cooked as a vegetable
3.	<i>Amorphophallus commutatus</i> L. Family: <i>Araceae</i>	Shevla	May-October	Tuber and Inflorescence	Tuber paste is applied externally to cure scabies	Inflorescence used as vegetable. The spathe is removed as it can cause itching in throat to reduce itchiness it is cook along with fruit of <i>Garuga pinnata</i> (Kakad) or cook with tamarind or kokum
4.	<i>Ampelocissus latifolia</i> (Roxb.) Planch Family: <i>Vitaceae</i>	Raan-draksh	May-August	Fruit, Stem, Bark and Root	Use for wound healing, stem bark is used in stomach pain and bone fracture	Fruits are edible, often eaten by birds and mammals
5.	<i>Artocarpus heterophyllus</i> Lam. Family: <i>Moraceae</i>	Fanas	April-August	Fruit	Bark Juice is used in the treatment of malarial fevers, and is also useful in reducing swellings caused by inflammation, roots Juice is applied to pimples, leaves are also used to treat jaundice, fevers, rheumatic pains, guinea worm sores and poor development of the foetus in pregnant Women	tender young shoots and fruits cooked and used as a vegetable, ripe fruit are eaten, seeds are roasted and eaten
6.	<i>Averrhoa bilimbi</i> L. Family: <i>Oxalidaceae</i>	Bilimbi	February-December	Leaves and flowers	leaves are put in water and the liquid is drunk daily as a remedy for high blood pressure, flowers is used for coughs its juice is made into syrup as a cooling drink for reducing fever	The fruit is occasionally eaten raw with salt or sliced thin and added to salads
7.	<i>Smilax zeylanica</i> L. Family: <i>Smilacaceae</i>	Ghotvel	September-December	Root and Leaves	Juice of young leaves gives orally in ulcers. Root powder mixed with powder of cardamom and cinnamon and boiled with cow milk gives orally in rheumatism	Tender leaves used as a vegetable.
8.	<i>Bauhinia purpurea</i> L. Family: <i>Fabaceae</i>	Kanchan	September-November	Leaves, Flower bud and roots	The bark, roots and flowers, mixed with rice-water, are used to cure poultice	Leaves - cooked and eaten as a vegetable. flower buds are often pickled or used in curries
9.	<i>Bauhinia racemosa</i> Lam. Family: <i>Fabaceae</i>	Apta	February-May	Leaves and gum	The gum and leaves are used medicinally, used as a astringent, in the treatment of headache, fever, skin diseases, blood diseases, Dysentery, and diarrhea	Young leaves are cooked and eaten as vegetable. Seed powder used to make roti
10.	<i>Bombax ceiba</i> L. Family: <i>Bombacaceae</i>	Kate-Savar	January-March	Flowers and seeds	The young roots are used in the treatment of cholera, coughs, urinary complaints, abdominal pain due to Dysentery	Flowers cooked as vegetable, Ripe seeds are eaten roasted, oil is obtained from the seed
11.	<i>Woodfordia fruticosa</i> (L.) Kurz. Family: <i>Lythraceae</i>	Dhataki	February-April	Flower	Flower powder mixed with curd and gives orally for curing dysentery. Externally flower powder applied on ulcers and wounds	Flowers are used as a vegetables. Flowers and leaves yields red colour dye
12.	<i>Cassia tora</i> (L.) Roxb. Family: <i>Fabaceae</i>	Takla	July-September	Leaves and Seeds	The leaves and seeds are useful in leprosy, ringworm, flatulence, colic, dyspepsia, constipation, Cough, bronchitis, cardiac disorders	Leaves are used as a Vegetable. Tea is prepared from seed powder

(Contd...)

Table 1: (Continued)

S. No.	Botanical name	Vernacular name	seasonal Availability	Edible part	Medicinal uses	Method of consumption
13.	<i>Commelina benghalensis</i> L. Family: <i>Commelinaceae</i>	Kena	August-October	Leaves	Traditionally use for the treatment of different diseases such as Burns, leprosy, Sore throat, Pain and Inflammation	Leaves are used as a Vegetable
14.	<i>Curcuma amada</i> Roxb. Family: <i>Zingiberaceae</i>	Ambe halad	July-September	Root	Root is used in perfumery, It is also used internally in treating coughs and other chest complaints such as bronchitis, The mashed or grated root is applied externally to the skin in the treatment of ulcers, Swelling, bruises, wounds	The root is used as a mild ginger flavoured spice in pickles
15.	<i>Dillenia pentagyna</i> Roxb., Family: <i>Dilleniaceae</i>	Chota Karmal	March-May	Fruit	The plant use for wounds, diabetes, diabetic neuritis, pneumonia, and burning sensation	The immature fruits are also eaten, either raw, cooked or pickled
16.	<i>Dioscorea alata</i> L. Family: <i>Dioscoreaceae</i>	Dukkar-kand	Throughout year	Tuber	Tuber powder mix with butter is given to check diarrhea. The roasted tuber mix with ghee and sugar candy are reputed remedy for piles	Tuber are used vegetable
17.	<i>Dioscorea bulbifera</i> L. Family: <i>Dioscoreaceae</i>	Konphal	July-September	Tubers	It is used in the treatment of Piles, dysentery, syphilis, ulcers, cough, leprosy, diabetes, asthma, and cancer. It is a raw material for contraceptives	Tubers are used as a vegetables. They can be boiled, baked, fried etc. The juice of the roots is taken to expel threadworm, dripped into wounds to expel worms and germs
18.	<i>Cordia dichotoma</i> G.Forst. Family: <i>Cordiaceae</i>	Bhokar	February-May	Seeds and Fruits	The seeds are considered a good remedy for ringworm; they are powdered, mixed with oil and applied topically	The immature fruits are pickled and are also used as a vegetable
19.	<i>Mucuna pruriens</i> (L.) DC. Family: <i>Fabaceae</i>	Khaj-kuiri	February-May	Bark, leaves, seeds	A decoction of the bark and leaves is used to treat dysentery, Crushed seeds are used to treat cancer and abscesses, and are boiled in a little water as a remedy for snake bites	The young tender leaves and young sprouts are eaten as a vegetable, also used in curries
20.	<i>Phyllanthus emblica</i> L. Family: <i>Euphorbiaceae</i>	Raan-Avala	March-June	Fruit	Fruits are used as a liver tonic; raw fruits as a coolant and mild laxative. Fruit liquor used in indigestion, anemia, jaundice	Fruits are eaten raw
21.	<i>Hibiscus sabdariffa</i> L. Family: <i>Malvaceae</i>	Ambadi	October-November	Leaves and Calyx	The plant is used widely the treatment of cardiac and nerve diseases and has been described as a diuretic. In drinking sour tea for the treatment of hypertension	The fleshy red calyx of fruit is removes and use as a vegetable to make curry. It is also used to make Red tea. Leaves are sour in taste used to make daal with Toor-daal
22.	<i>Leea macrophylla</i> Roxb. ex Hornem. Family: <i>Vitaceae</i>	Gajakarni	July-September	Leaves, Fruit, Tuber and Root	The root paste is consumed with a glass of milk as a single monthly dose for birth control, The powdered tuber is used in for sexual debility in males	Leaves cooked and eaten as a vegetable Used as a famine food. Fruits are eaten raw
23.	<i>Madhuca longifolia</i> (J.Koenig ex L.) J. F. Macbr. Family: <i>Sapotaceae</i>	Moha	April-August	Fruits, leaves and Flowers	used in the treatment of coughs, colds and bronchitis, and in the treatment of snakebites, They are fruit in ghee and then eaten as a remedy for piles, The oil from the seeds is used in the treatment of skin diseases	The fragrant fleshy flowers can be eaten raw or cooked, The dried flowers can be powdered and added to flour, An oil extracted from the seed.
24.	<i>Hemidesmus indicus</i> L. Family: <i>Periplocaceae</i>	Anantmul	July-Sept	Root	It is used traditionally to treat a wide variety of illnesses including rheumatism, leprosy, urinary tract and skin infections	Roots are boiled and eaten

(Contd...)

Table 1: (Continued)

S. No.	Botanical name	Vernacular name	seasonal Availability	Edible part	Medicinal uses	Method of consumption
25.	<i>Morinda citrifolia</i> L. Family: <i>Rubiaceae</i>	Bartondi	Throughout the Year	fruit	Noni juice suggested uses are for its antibacterial, antiviral, antifungal, antitumor, painful inflammation and swelling root extract to treat diabetes, chewing leaves releases and activates soluble dietary	Consumed as a fruit Juice
26.	<i>Diospyros melanoxylon</i> Roxb. Family: <i>Ebenaceae</i>	Temrun	April-June	Fruit	fruit helps in stomach disorders. The dried fruit powder is used as carminative and astringent agent and is useful in treating urinary, skin and blood diseases	The yellow fruit pulp is fleshy and sweet is consumed as a raw
27.	<i>Ensete superbum</i> (Roxb.) Cheesman. Family: <i>Musaceae</i>	Raan-Kel	June-September	Flower	Seed powder applied externally as a antidote on dog bite. Decoction of flowers were given orally in kidney stone	Stem and flower are boiled and cooked as a vegetable
28.	<i>Semecarpus anacardium</i> L.f. Family: <i>Anacardiaceae</i>	Bibba	June-July	Seed and fruit	The juice obtained from the fruits is used externally to remove rheumatic pains, aches and sprains, The latex is applied externally in the treatment of headaches, skin diseases, A paste of the seed, mixed with honey, is used in the treatment of gastric troubles	The roasted fruit are eaten.
29.	<i>Blumea eriantha</i> DC. Family: <i>Asteraceae</i>	Nimurdi	November-April	Leaves, shoot and root	Leaves are used as Diarrhea The root kept in the mouth is said to cure disease of the mouth. It is also used for infected wounds, respiratory infections, and stomach pains, good for bronchitis diseases of the blood, fevers, thirst and burning	Tender leaves and young shoots Cooked and used as vegetable
30.	<i>Ziziphus mauritiana</i> Lam. Family: <i>Rhamnaceae</i>	Sambor	July-Sept	Leaves, Root and fruits	A decoction of the root has been used in the treatment of fevers, A decoction of the roasted leaves is an effective treatment for cough and asthma	The fruit is eaten raw or preserved, Young leaves can be cooked as a vegetable

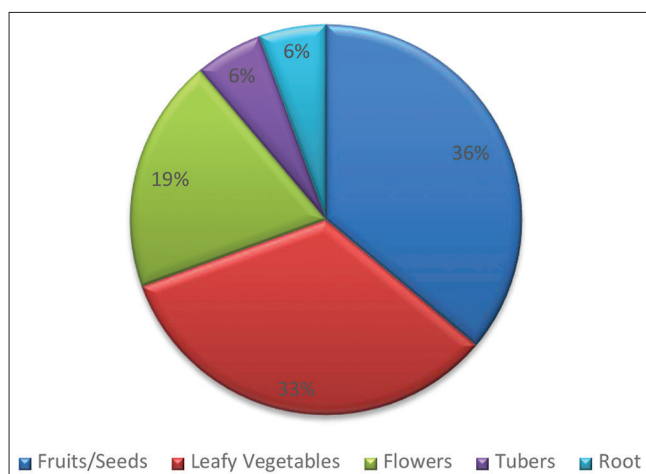


Fig. 1: Percentage of Wild Edible Plants recorded in terms of parts used

generations as well as their tendency to migrate to cities for lucrative jobs, there is possibility of losing this wealth of knowledge in near future. Therefore, the study is needed for the documentation of wild

edible plants used by tribes. Increased use of these plants may prove to be one of the major solutions to the problem of malnutrition and other increasing health issues among the tribals.

CONCLUSION

Ethnobotanical research is the way to understand the future of human relationship with this land and it is useful in the identification of new drug and food resources. Wild edible plants represent inexpensive, locally available and versatile good sources capable of improving nutrition and health quality (Binu, 2010). The present work documented 30 wild edible and medicinal plants. Out of these, most of the plants have medicinal values. Further, investigation on their phytochemical and nutraceutical studies may provide better nutritional and medicinal sources for future.

AUTHORS' CONTRIBUTIONS

Shivprasad D. Mahadkar and Rudrakshi B. Raut carried out seasonal field visits and collected the information and identification of wild edible plants. All the authors have read and approved the final manuscript.

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