Wild Edible Vegetables Used for Health Benefit by Rural People of Gondia District in Maharashtra State, India

Tulsidas Nimbekar, Dilip Sanghi*

Shri Laxmanrao Mankar Institute of Pharmacy, Amgaom Gondia, Maharashtra, India - 441902

***Corresponding author:**

Tulsidas Nimbekar

Shri Laxmanrao Mankar Institute of Pharmacy, Amgaom Gondia, Maharashtra, India - 441902, Tel: 9326861962.
Email: tnimbekar@gmail.com

Received : April 21, 2022
Published : August 13, 2022

ABSTRACT

The population outburst resulted into an inadequate accessibility of food resources such as cereals, pulses, vegetables and fruits to the individual. Documentation and spreading responsiveness of utilization of wild edible plants in the regular family diet may be a solution to overcome this alarming problem. Wild edible vegetables play an important contribution to the livelihood of the households who gather and consume them. As per the traditional knowledge, these wild edible vegetables or plants play a significant task in the sustenance of forest people residing in forested areas. A scientific study of edible wild plants is important for pin pointing the potential sources which could be even utilized at the time of scarcity and cultivated as well as a source of food for the budding population. In respect of this, the present work was undertaken which documents as many as 50 plant species that easily found in the surveyed area. The area for wild edible vegetables having some medicinal potential has been carried out in 12 villages of Gondia district, Maharashtra, India. The study showed that the plants used are either eaten raw, cooked by boiling in water, frying in oil or baked to be served as dishes such as stew, salad as hot drink and as nutraceuticals.

Keywords: Wild edible plant, Gondia, Forest dwellers and Traditional knowledge

INTRODUCTION

Domesticated vegetables have been selectively bred for look, production quality, taste, length of storage, and qualities other than nutrition and these vegetables sold in the market are exposed to various pesticides, herbicides, and range of other chemicals and they have been genetically modified or irradiated. At this context safety of eating is a general concern; wild foods don't have these problems.

Wild plants are reported to be edible and easily available even during adverse conditions like drought and scarcity. Such wild species are accepted like other cultivated species and they play an important role in solving the various food troubles of

DOI : https://doi.org/10.35702/Trad.10009

the world. India is in the second position in population as well as vegetable production as per the requirements [1]. Forest resources, mainly plants and plant products, have an important place in the daily life of tribals and other forest dwellers. Forest provides food as Forest products (NTFPS) that are necessary not only for meeting their own requirements, but these are also a potential source of their income for livelihood [2].

Though plants have been used as a source of food, fodder, shelter, clothing, medicine and a verity of helpful commodities from earliest time, the value of wild edible plants in food security has not been given adequate attention in India [3]. Wild edible plants are the precious gift from our nature and most of the ethnic communities strongly depend on it for their day to day life. Wild vegetables are available locally and therefore inexpensive for low income sectors of the economy. They are good sources of important nutrients, which play significant roles in nutrition, food security and serve as supplements for the management of nutrition related illnesses. Foods plants are not only supplement to the food quality, but also an important option during starvation for survival and thus makes significant contribution to the human nutrition throughout the year [4,5].

Gondia district of Maharashtra state is well-known for the forest resources with abundant amount of flora and fauna. During the year 2020-21, an estimated 2833 sq. km of area was under forest which constituted 50.22% of the total area. Forest resources contribute significantly to the economy of the district. Nagzira, 152 sq. km and Navegaon National park, 133 sq. km, Nawegaon Wildlife Sanctuary (123 sq km), New Nagzira Wildlife Sanctuary (151 sq km) and Koka Wildlife Sanctuary (97 sq km) are the national reserve forests [6,7]. These local people are still depending on wild food resources throughout monsoon season and consume with conventional way. During the first spell of rain in June –July leafy vegetables are available on a large scale.

MATERIALS AND METHODS

Study Area

Gondia is an eastern district of Maharashtra and lies between 20.39 to 21.380 North and 79.27 to 82.420 East having total forest area of 2151.15 sq.km. The district is divided into eight talukas where most of the residents depends upon agriculture amongst fifteen villages were preferred from district which are in association with the dense forest. The vegetation of the district is interestingly diverse, as on north eastern part of district Satpuda hilly ranges are running, apart from this district has protected areas like Navegaon National Park and Nagzira Wild life Sanctuary which has been declared as Tiger Reserve by the National Tiger Conservation Authority (NTCA) and 46th of the country on the date of 7th September 2013 [8,9].

Field Survey

The detailed field survey was carried out by four members from our Institute during the period of May 2020 to April 2021. During this period field tours were conducted in different seasons of the year. During the survey, data on local name, edible parts, available period, habit and habitat, phenology and fruiting period and nature of uses were collected and recorded. The data had been collected from the local people who have a strong connection with traditional agriculture for their day-to-day needs. The Primary data was collected through Participatory Rural Appraisal (PRA), group

discussion, semi-structured interviews and household survey. The collected plant parts were identified using relevant scientific literature [10,11].

DOI : https://doi.org/10.35702/Trad.10009

RESULTS AND DISCUSSION

The present study focuses mainly on some of the plants reported from forest areas of Gondia district for their alternative uses as nutritionally useful plants and reveals the data obtained during the study. A total of 50 plant species belonging to 28 families have been recorded in the present study (Table 1).

Table 1. Nutritionally important plant with their family and vernacular name. (11-15)

Sr.No	Vernacular Name	Botanical name	Family	Part used	Medicinal and nutritional uses
1	Aaghada	*Achyarnthes aspera*	Amaranthaceae	Whole Shrub	In traditional medicinal system, A. aspera is known for diuretic and hepatoprotective properties and used to cure several diseases viz., malarial fever, dysentery, asthma, hypertension and diabetics. Dry seeds are Eaten as raw.
2	Dumber sati	*Agaricus bisporus*	Agaricaceae	Mushroom	Agaricus mushroom is used for cancer, type 2 diabetes, high cholesterol, "hardening of the arteries" (arteriosclerosis), ongoing liver disease, bloodstream disorders, and digestive problems. Fruiting bodies are eaten as vegetables
3	Patur	*Alternathera sessilis*	Amaranthaceae	Leaves	Treat hepatitis, tight chest, bronchitis, asthma and other lung troubles, to stop bleeding and as a hair tonic. Leafy shoots are eaten as vegetables
4	Rajgira	*Amaranthus cruentus*	Amaranthaceae	Leaves	Low levels of healthy red blood cells (anemia) due to iron deficiency, Stomach ulcers, Diarrhea and in Swollen mouth and throat.
5	Matbhaji	*Amaranthus spinosus*	Amaranthaceae	Leaves	The root paste with equal volume of honey controls vomiting, when mixed with sugar and water controls Dysentery. Among vegetables, amaranths are rich sources for micronutrients and dietary minerals.
6	Khedabhaji	*Amaranthus spinosus*	Amaranthaceae	Leaves	It is used to treat diarrhoea. The root is also used for toothaches. leaves are considered a good emollient and applied externally in cases of ulcerated mouths, eczema, burns, wounds, boils, earache and hemorrhoids.
7	Chaulayi Bhaji	*Amaranthus viridis*	Amaranthaceae	Leaves	The young leaves and stem of the plant use as a vegetable. Useful as an Antioxidant
8	Suran	*Amorphophallus paeoniifolius*	Araceae	Rhizomes	Commonly available tuber in South India, widely used in folk medicine for treatment of acute rheumatism, tumors, lung swelling, asthma, vomiting, and abdominal pain.
9	Shepu	*Anethum graveolens*	Apiaceae	• Leaves	• Nutrients including Vitamin A, C, D, riboflavin, manganese, folate, iron, copper, potassium, magnesium, zinc and dietary fibres. Thus, imbued with these nutrients and antioxidants.

DOI : https://doi.org/10.35702/Trad.10009

10	Washte	*Bambusa arundinacea*	Poaceae	Stems	In Ayurveda for the treatment of cough, skin diseases, wounds, digestive disorders, nausea, gynecological disorders and fever. The decoction of leaf and node portion use as a traditional medicine. The young shoot of this plant is the good source of carbohydrate.
11	Koilari	*Bauhinia purpurea*	Caesalpiniaceae	Leaves	Antibacterial activity, diarrheal condition. Flowers are eaten as vegetables in the form of "Bhaje" (Cooked) & Fruits are eaten as vegetables
12	Khaperkhuti	*Boerthavia diffusa*	Nyctaginaceae	Leaves	Punarnava is mainly used to treat accumulation of fluids (Oedematous conditions) in the body. It is considered to be an effective "Rasayana". It is also used in the treatment of anemia and liver diseases as recommended by Indian Ayurveda.
13	Navalakol	*Brassica oleracea*	Crucifarae	Fruits	It is used in the treatment of gout and rheumatism. The leaves can be used as a poultice to cleanse infected wounds. Also as Cardiotonic, Stomachic.
14	Jangli Tur	*Cajanus scarabaeoides*	Leguminosae	Fruits	Uses for treatment of anemia, smallpox, gonnorhoea, rinder pest, sores, dysentery, cholera, swelling and different inflammatory disorders
15	Bahava	*Cassia fistula*	Caesalpiniaceae	Flowers	laxative, anti-inflammatory, for swelling. Fruits used for asthma, diabetes and eczema.
16	Tarota	*Cassia Tora*	Caesalpinaceae	Leaves	According to Ayurveda the leaves and seeds are acrid, laxative, antiperiodic, anthelmintic, ophthalmic, liver tonic, cardiotonic and expectorant.
17	Kuradu	*Celosia argentea*	Amaranthaceae	Leaves	Used in traditional medicine for the treatment of headache, sores, ulcers, eye inflammations, skin eruption, painful menstruation and carpal tunnel syndrome.
18	Awadi-dhawadi	*Chenopodium album*	Chenopodiaceae	Leaves	Used as anthelmintic, antiphlogistic, antirheumatic, contraceptive, laxative, odontalgic etc. It is also used in the treatment of rheumatism, bug bites, sunstroke, urinary problems, skin problems etc.
19	Tendli	*Coccinia grandis*	Cucurbitaceae	Fruits	The fruit are used to make medicine. People take ivy gourd for diabetes, gonorrhea, and constipation. Some people apply ivy gourd leaves directly to the skin for wounds. Ivy gourd fruit and leaves are used as a vegetable.
20	Dhopa	*Colocasia esculenta*	Araceae	Leaves	It has been utilized for treatment of various ailments such as asthma, arthritis, diarrhea, internal hemorrhage, neurological disorders, and skin disorders. The juice of corm is widely used for treatment of body ache and baldness.
21	Kena Leaf	*Commelina benghalensis*	Commelinaceae	Leaves	Laxative, diuretic, carminative and antiinflammatory. Leaf use in burn.

DOI : https://doi.org/10.35702/Trad.10009

22	Chechbhaji	*Corchorus aestuans*	Tiliaceae	Leaves	Roots or leaves is taken for the treatment of gonorrhea, seeds are used for the treatment of stomach-ache and pneumonia
23	Chinchnuk	*Corchorus olitorius*	Malvaceae	Fruits	The leaves are demulcent, diuretic, febrifuge and tonic. Richness in potassium, vitamin B6, iron, vitamin A and vitamin C
24	Kevkanda	*Costus speciosus*	Zingiberaceae	Rhizomes	Antioxidant and antimicrobial activity. It is also use as Ayurvedic medicine hence uses to treat fever, rash, asthma, bronchitis, and intestinal worms.
25	Pakanbhed	*Cryptocoryne retrospiralis*	Araceae	Leaves	It useful in arthritis, Antibacterial Activity, for the treatment of diarrhoea, fever and jaundice, burns and boils.
26	Mataru	*Dioscorea bulbifera*	Dioscoreaceae	Fruits	Used in the treatment of Piles, dysentery, syphilis, ulcers, cough, leprosy, diabetes, asthma, and cancer. Tubers are eaten as a vegetable.
27	Umber	*Ficus racemosa*	Moraceae	Fruits	The leaves are used in the treatment of diarrhoea The root is chewed as a treatment for tonsillitis.
28	Pipal	*Ficus religiosa*	Moraceae	Leaves	Used in asthma, laxative, purgative, neuralgia and inflammation.
29	Ambadi	*Hibiscus Sabdariffa*		Leaves	Used for the treatment of high blood pressure, liver diseases and fevers. In large amounts, hibiscus tea acts as a mild laxative. In traditional treatment for high blood pressure, cholesterol reduction. It useful in heat control
30	Kuda	*Holarrhena pubescens*	Apocynaceae	Flowers	It has antibacterial and Amoebicidal properties. Also use in piles as well as in general bleeding. Several Indian tribes use this plant in diabetes.
31	Karmotabhaji	*Ipomoea aquatica*	Convolvulaceae	Leaves	It is used against piles, and nosebleeds, as an anthelmintic, and to treat high blood pressure.
32	Popati	*Lablab purpureus*	Fabaceae	Fruits	It is antimicrobial, antifungal, anti-inflammatory, tonic, aphrodisiac, hypocholesterolemic, galactagogue, has antispasmodic properties and is an appetite suppressants.
33	Lauki	*Lagenaria siceraria*	Cucurbitaceae	Fruits	Reduces stress, Benefits the heart, Helps in weight loss, Helps in treating sleeping disorders, Prevents premature greying of hair, Helps in digestion and Benefits the skin

DOI : https://doi.org/10.35702/Trad.10009

34	Pathari	*Launea procumbens*	Asteraceae	Leaves	Used as a food and washing agent, rheumatism, galactogogues, and increases milk production. Eye redness and itchiness and also traditionally used in kidney (painful urination), liver and sexual diseases like gonorrhea.
35	Kavatha	*Limonia acidssima*	Rutaceae	Fruits	It is used as tonic for heart and lungs, the unripe fruit is used as anti-diarrhoeal, leaves of wood apple are anti-diabetic, fruit pulp is used in the treatment of sore throat etc.
36	Dodaka	*Luffa acutangula*	Cucurbitaceae	Fruits	rich in a vast array of essential components like dietary fibers, water content, vitamin A, vitamin C, iron, magnesium and vitamin B6. They are naturally low in calorie content, unhealthy saturated fats and cholesterol.
37	Pudina	*Mentha spicata*	Lamiaceae	Leaves	It is useful in stomach disorder, carminative, tonic, stomach tonic, anti-cough, anti-seizure, astringent, analgesic and sedative.
38	Katwal	*Momordica dioica*	Cucurbitaceace	Fruits	Unripe Fruits are eaten as vegetables, Diabetics, laxative, hepatoprotective and diuretics.
39	Shevga	*Moringa oleifera*	Moringaceae	Fruits	Used as cardiac and possess antitumor, antipyretic, antiepileptic, antiinflammatory, antiulcer, antispasmodic, diuretic, antihypertensive, cholesterol lowering, antioxidant and antidiabetic activities.
40	Aaratfari	*Olax psittacorum*	Olacaceae	Leaves	In Ayurvedic medicine, the bark is used in anaemia and as a supporting drug in diabetes; also in the treatment of fever.
41	Ambuti	*Oxalis corniculata*	Oxalidaceae	Leaves	This plant is edible and it is used as salad. This plant is anti-scorbutic and used in the treatment of scurvy. This herb is anti-inflammatory, anthelminthic, diuretic, febrifuge, relaxant, stomachic, astringent, analgesic and styptic in nature.
42	Bhuiawala	*Phyllanthus amarus*	Euphorbiaceae	Whole shrub	It is an important plant of Indian Ayurvedic system of medicine which is used in the problems of stomach, genitourinary system, liver, kidney and spleen.
43	Kapalfodi	*Physalis Pubescens*	Solanaceae	Whole shrub	The whole plant is antipyretic, depurative, diuretic, pectoral, vermifuge. A decoction is used in the treatment of abscesses, coughs, fevers, sore throat etc. An infusion of the whole plant is used as a narcotic
44	Owabhaji	*Plectranthus amboinicus*	Lamiaceae	Leaves	It is used in herbal medicines for the treatment of various disorders such as asthma, flu, eczema, and cardiovascular disorders.

DOI : https://doi.org/10.35702/Trad.10009

45	Ghorbhaji	*Portulaca oleracea*	Portulacaceae	Leaves	In folk medicine, acting as a febrifuge, antiseptic, vermifuge. It exhibits a wide range of pharmacological effects, including antibacterial, antiulcerogenic, anti-inflammatory, antioxidant, and wound-healing properties.
46	Sherdira	*Smilax zeylenica*	Smilacaceae	Stems	It useful blood purification Root and rhizome has antirhumatic, Antioxidant activity. It is also used in the treatment of venereal diseases.
47	Palakbhaji	*Spinacia oleracea*	Amaranthaceae	• Leaves	• Spinach is high in vitamin A, vitamin C. This vitamin is a powerful antioxidant that promotes skin health and immune function. Vitamin K1. This vitamin is essential for blood clotting, Folic acid, Iron and Calcium
48	Anas sati	*Termitomyces heimii*	Agaricaceae	Mushroom	Bioactive components in mushrooms have potential uses as antioxidants, immunomodulators, antitumors, and antimicrobials. Termitomyces also has a potential for treating neurodegenerative disorders. Fruiting bodies are eaten as vegetables
49	Undirkani	*Theriophonum indicum*	Araceae	Leaves	Leaves are eaten as Vegetables.
50	Methi bhaji	*Trigonella foenum-graecum*	Fabaceae	Leaves	Fenugreek leaves are eaten in India as a vegetable. It is taken by mouth for digestive problems such as loss of appetite, upset stomach, constipation, inflammation of the stomach (gastritis). Fenugreek is also used for diabetes, painful menstruation, polycystic ovary syndrome, and obesity.

Most of these plants are seasonal and available in specific duration of the year. Remaining plants which are perennial and available throughout the year are also utilized in particular month of the year due to the plant part which is used in diet available for few months only. Many plants have been consumed for dual purpose i.e. as a food and for medicinal purposes. Out of total plant parts, around 54 % leaves, which are followed by 24 % of fruits, 4 % flowers, 4 % Rhizome, 4 % mushroom, 6% whole shrub and 4% stems of plant are used by the people of Gondia district. The details of plant parts used are presented in graphical form in Figure 1 and table 2.

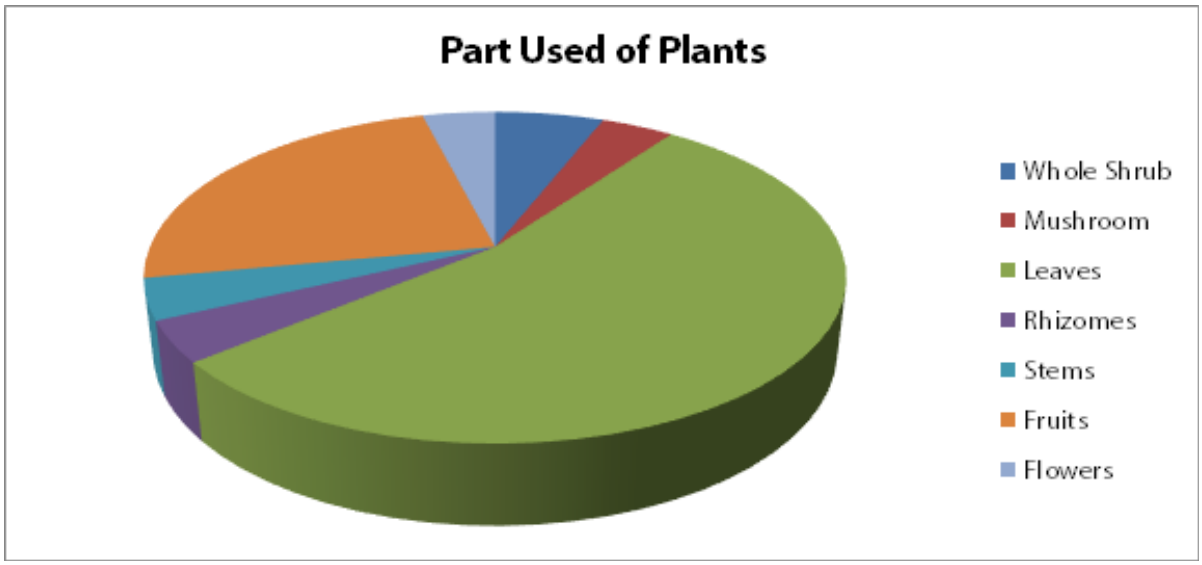

Figure 1: Analysis of usable parts of edible wild plants of the studied area

Table 2: Usable parts of edible wild plants of the studied area

Part Used	No. of plant species	Percentages
Whole Shrub	03	6
Mushroom	02	4
Leaves	27	54
Rhizomes	2	4
Stems	2	4
Fruits	12	24
Flowers	2	4
Total	50	

Most of the tribal communities has good knowledge of edible plants available in surrounding forest and know how to eat the edible part and discard the other parts. This traditional knowledge of consuming wild plants is passed on orally from one generation to another and need to be safeguarded. Thus, wild edible plants can act as a link between habitat, season of availability, local people and culture associated with tribal people [12].

All the plants are very important for nutrition's purpose and improvement of health. Among these plants species most of the plants are used for medicine purposes, like, Diabetics, Malaria, Jaundice, Stomach disorder, Cough, Piles, Amebic stool, Gastritis, Arthritis, blood purification, Cyst, Worm, etc. Different dishes prepared by them having medicinal properties [13,14].

CONCLUSION

The final conclusion of the present study is that, there are plenty of plants are available in the forest of Gondia district which could be utilized in the diet as an alternative food having

medicinal and nutritional value. However, there is lack of scientific studies on these plants especially their nutrients and anti-nutrients composition. Hence it is essential to conduct a detailed nutritional and cultivation related investigation of some of potential plants. It has been also observed that traditional knowledge of wild food is a sharply declining due to rapid depletion of forest cover and our education system. It is not focus on the traditional knowledge which has been established in our social and cultural system. It is essential to educate teachers on this platform to teach the students. The new generation will be interested to study the plants and local resources.

REFERENCES

1. Zode Ravindra, Walay Tagade, Mahesh Kawale, Chaturvedi Alka. (2020). Potential use of wild edible plants from Arjuni/ morgaon tehsil of gondia district (MS), India. International Journal of Researches in Biosciences, Agriculture and Technology. 1(8):103-118.

2. Reddy KN, Pattanai KC, Redd, CS, Raju, VS. (2007). Traditional knowledge on wild plant in Andhra Pradesh. Indian Journal of Traditional knowledge. 6:223-229.

3. Nimbekar TP, Wanjari BE, Nema MV, Bhiskute SM. (2012). Traditional Knowledge on Antimicrobial activity of some ethnomedicinal plants used by tribes of Gondia District in Maharashtra State. Research Journal of Pharmacognosy and Phytochemistry. 4(3):147-151.

4. K.C. Kiran, C. Dhanush, C.V Gajendra, B.M. Reddy, (2019). Diversity and Seasonal Availability of Potential Wild Edible Plants from Vidarbha Region of Maharashtra State, India. International Journal of Current Microbiology and Applied Science. 8(2):1434-1446.

5. Jadhav VD, Mahadkar SD, Valvi SR. (2011). Documentation and ethnobotanical survey of wild edible plants from Kolhapur district. Recent Research in Science and Technology. 3(12):58-63.

6. Patle CK. (2015). Ethenobotanical studies on wild edible plants of gond, halba and kawar tribel of salekasa taluka, gondia district Maharashtra state, India. International Research Journal of Pharmacy. 6(8):512-518.

7. Tulsidas P. Nimbekar, Anil Sao, Shishupal Bodhankar. (2020). Traditional Knowledge on Potential Treatment Options in Plants for COVID-19. International Journal of Pharmacy and Pharmaceutical Research. 18(3):96-103.

8. Tulsidas Nimbekar, Ajay Dongarwar, Damodar Goupale. (2020). Traditional Knowledge of Medicinal Herbs of Gondia District for Beauty Care: An Ethno-Botanical Survey, Saudi Journal of Medical and Pharmaceutical Sciences. 10(2):435-437.

9. Kailash S. Lokhande. (2020). Ethnobotanical Survey on Wild Edible Plants Used by Tribals & Rural People of Arjuni/ Mor Taluka, Gondia District, Maharashtra State, India. Advances in Zoology and Botany. 8(3):209-217.

10. Sawarkar Prafulla. (2017). Wild Food Diversity of Nawegaon-Nagzira Tiger Reserve in Gondia-Bhandara district of Maharashtra, India, Int. J. of Life Sciences. 5(4):620-626.

11. Turendrakumar K. Lilhare, Dipak K. Koche & Mahesh V. Kawale. (2017). Medicinally important Wild Edible Plants of Eastern Vidarbha, Hislopia Journal. 10(1):73-88.

12. Nimbekar TP, Katolkar PP, Wanjari BE, Nema MV, Patil AT. (2011). Traditional knowledge of medicinal plants of Gondia district in Maharashtra state: An ethno-botonical survey. International Journal of Herbal Medicine and Toxicology. 5(2):9-17.

13. Sawarkar PU, Kulkarni DK. (2015). Wild food Resources of Tadoba-Andhari Tiger Reserve in Chandrpur district of Maharashtra, India Indian Journal of Fundamental and applied life sciences. 5(4):76-83.

14. Bhogaokar Prabha Y, Marathe Vishal, Prachi P. Kshirsagar. (2010). Documentation of Wild Edible Plants of Melghat Forest, Dist. Amravati, Maharashtra State, India. Ethno botanical leaflet. 14(7):751-758.

Citation: Nimbekar T, et al. (2022). Wild Edible Vegetables Used for Health Benefit by Rural People of Gondia District in Maharashtra State, India. Traditional Medicine. 3(1):9.

DOI : https://doi.org/10.35702/Trad.10009