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Research Article

AN ETHNOMEDICINAL SURVEY OF WILD VEGETABLES FROM NANDED DISTRICT (MS), INDIA

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ABSTRACT

The use of wild vegetables as a source of food is well documented all over the world. Wild food plants are commonly used in the traditional diets of indigenous people in many parts of the world, including India. Studies on the role of wild leafy and fruit vegetables in food security could provide important information for the development of policies on careful exploitation of natural resources for human sustenance. This study aimed to assess the medicinal uses/values of selected wild edible vegetables consumed as a source of food by local communities from the Nanded District. In the present study total of thirty-nine different wild vegetables were reported to be consumed by local tribal peoples which have a reported ethnomedicinal value in the literature. The reported 39 wild vegetables were found to be distributed within 23 different families. Among them, members of Cucurbitaceae (06) have been dominated the overall count, followed by Malvaceae (04) and Amaranthaceae (04). Leaves and Fruits are the common part to be used in the preparation of vegetable dishes. The study suggests consumption of wild vegetables with medicinal values should be encouraged since it may assist in the well-being of communities in/of lower economic strata. The results of the study also indicate that the health of tribal people is sturdy may be because of their diversified dietary contents. The wild vegetables are nutritionally rich, organic, and high in phytoconstituents, especially secondary metabolites, minerals, and vitamins.

Keywords: Wild Vegetables, Cucurbitaceae, Ethnomedicine, Phytoconstituents, Tribal community.

1. INTRODUCTION

Wild vegetables refer to plant species that are not cultivated or domesticated but are accessible from various natural habitations and used as food [1]. Recently people focus more on limited species that are preferred as dietary supplements obtainable from naturalized species and resulted in less attention to native species [2]. Leafy and Fruits vegetables are important sources of minerals, fiber, and vitamins, which provide essential nutrients for human health. In most cases, rural communities depend on wild resources including wild vegetables to meet their food needs in periods of food crisis. The term wild-food is used to describe all plant resources outside of agricultural areas that are harvested or collected for human consumption in forests, savannah, and other bushland areas. The nutritional role and health benefits of wild vegetables have been reported in many surveys worldwide [3-6].

Many wild plants having rich nutritional contents [7] are important as dietary supplements, providing trace elements, vitamins, and minerals. According to Food and Agricultural Organization (FAO) report, at least one billion people are thought to use wild food in their diet [8]. The present study aimed to document indigenous leafy and fruit species used as vegetables by local tribals communities (Andh, Koli-Mahadev, Dongar-Koli, Kolam, Mannerwarlu, Gond, Raj Gond, Bhil, Bhil garsia) from Nanded District. These indigenous communities are still relying on their traditional knowledge for healthy livelihood.

Wild vegetables are important in folk traditions and on various occasions, a special plant is recommended to be eaten. Therefore, ethnodirected research will be useful in the discovery and development of the new drug as well as in search of new food resources. This study is an attempt to know about traditionally used wild edible plants by the indigenous peoples from deep tribal pockets. It will also help to know about these vegetables before the dramatic loss of traditional knowledge regarding wild vegetables.

2. MATERIAL AND METHODS

2.1. Study area

The study was conducted in different villages located in the Nanded District of Maharashtra state, India. The District of Nanded lies between 180 15' to 190 55' North latitudes and 770 to 78025' East longitudes. It covers an area of 10,332 sq km. It is located in the South-Eastern part of the state. The climate is variable with temperate and subtropical areas and most of the population lives in rural villages and survives by subsistence farming. The current study focused on selected a total of seven rural villages (Therban, Somthana, Somthana-tanda, Shingarwadi, Dhawari, Dhanora, and Borgaon) situated in the Nanded District of Maharashtra.

2.2. Data collection and analysis

A systematic and extensive ethnobotanical survey was carried out in different villages of the Nanded district from June 2020 to Jun 2021 for the collection of information on wild vegetable species being used by tribal communities in the study area by following all COVID-19 safety measurements. In the present study, a detailed survey was conducted during which various villages were visited and information was gathered about the people knowing wild vegetables or those involved in the collection and sale of these plants. During the survey, a Semi-structured questionnaire was used to interview respondents after Prior Informed Consent was obtained verbally with them before commencing each interview. A total of 90 informants (58 females and 32 males) between the ages group 20-90 years were interviewed with a questionnaire. During the interviews, respondents were asked questions about the local names of known wild vegetables, methods of preparations, or recipes prepared individually or in combination with other plants, taste, supply system, ethnomedicinal, and other additional uses. The collection of plant specimens assisted in clarifying the confusion that usually arises due to reference by local people to one species by two or more common names. In some cases, different species are known by one common name. The pressed specimens were validated and deposited in the Botany department. Validation of authority on botanical names was done through the International Plant Names Index (IPNI) database [9] for the botanical nomenclature of species. During the wild plant's collection and identification, a GPS Map Camera (Android Mobile app) was used for wild vegetable pictures with correct GPS latitude and longitude. The frequency index was calculated using a mathematical formula adapted from [10].

The formula is $FI = FC/N \times 100$

Where FI = Frequency index,

FC = Number of participants and

N = Total number of participants.

3. RESULTS AND DISCUSSION

3.1. Demography of informants

Among the 90 respondents interviewed in this study, most of them were elders aged above 60 (n = 43) and followed by adults aged between 36-59 (n = 35). Youth aged between 20-35 (n=12) constituted the least category. The results show that elders contributed more vegetables with medicinal values as compared to other age categories. When looking at gender, females (n=58/90) dominated over males (n=32/90). Fifty-two percent of the surveyed respondents hold secondary education while 5, 19 and 24% had tertiary education, no education, and primary education respectively (Table 1).

Table 1: Demographic structure of participants

Parameter	Specification	Fre-quency	Percentage (%)
Gender	Male	32	36
	Female	58	64
Status	Youth (20-35)	12	13
	Community adult (36-59)	35	39
	Elder (>60)	43	48
Education	None	17	19
	Primary	22	24
	Secondary	47	52
	Tertiary	4	5

3.2. Taxonomic diversity, life forms, and plant parts used

Thirty-nine wild vegetables indicated in Table 2 were recorded from the 90 respondents. The recorded vegetables belong to 23 different plant families dominated by the Cucurbitaceae family (n = 6) followed by Malvaceae (n = 4), and Amaranthaceae (n = 4) as the third most documented families. The remaining twenty families were represented by one or two species each. The fact that Cucurbitaceae was found to be represented by the highest number of species used for vegetables, in their documentation of traditional leafy vegetables [11]. In the present study, Cucurbitaceae was also found to contribute more species as compared to other documented families.

3.3. Medicinal applications and dosage

During the current survey, it was apparent that leaves (n=22) were the most used part in the preparation of vegetables followed by fruits (n=14), flowers (n=04), seeds (n=02), and tubers (n=01) respectively showed in (Fig.1). In numerous villages, Cucurbitaceae fruits were frequently consumed during fruiting seasons.

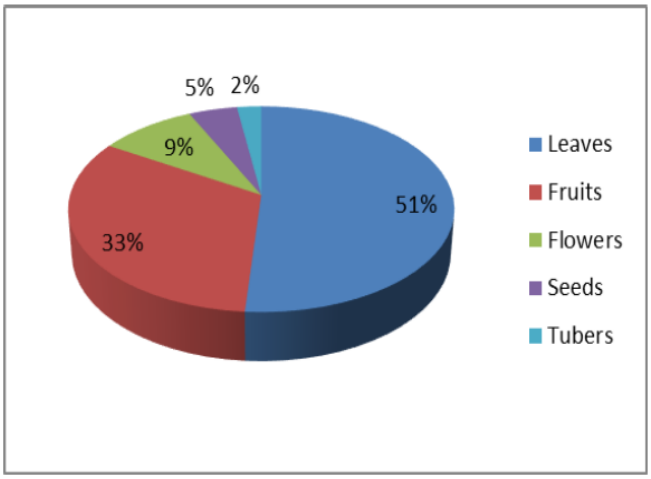

Fig. 1: Different life forms of selected wild vegetables

As indicated in Table 2, the majority of the wild vegetables reported to be used for folk purposes are asthma, cough, fever, diabetes, ulcer, jaundice, cardiovascular disease, hemorrhoids, and colitis. In the treatment of these various medical conditions, most of the vegetable leaves are eaten when cooked. In *C. argentea,* leaves are used as a cooling application to inflamed areas, relieve gastrointestinal disorders, and are antipyretic. The whole plant is used as an antidote in snake poison [12].

The leaves of *C. dichotoma, P. oleracea, C. tora, M. emarginata, C. album,* and *C. olitorius* are used for the treatment of fever, diarrhea, cough, headache, ulcers, and other diseases. *P. quadrifida, T. terrestris, C. hirsutus,* and *C. album* leaves are used to cure urinary discharge and urinary disorders. *L. procumbans* and *C. hirsutus* leaves are used for skin disorders. The leaves paste of *B. bamboo* and *C. hirsutus* is applied externally to cure wounds. The leaves of *C. olitorius* are recommended for pregnant and nursing mothers because of their high iron content [13]. Fruits are also used in the preparation of a tonic that is effective against cholera, catarrh, diarrhea, diabetes, bronchitis, hypertension, and respiratory disorders. The fruits of *M. dioicea, C. dichotoma, F. racemosa,* and *L. cylindrica* are used in the treatment of cold, cough, and fever. Wild fruits of *M. dioicea* and *L. cylindrica* are used in snake bites. Although, fruits of *S. pimpinellifolium* and *C. maxima* are used in skin burns. *L. cylindrica* fruits are used to induce labour pain during childbirth [14]. Flowers of *D. muricata* and *B. ceiba* are used to treat urinary discharge and urinogenital disorders respectively. Flowers of *M. oleifera* and *S. grandiflora* used in headache and eye infections. *B. ceiba* flowers are used by tribal communities for gastrointestinal, skin diseases, diabetes, impotence, and gynecological disorders [15]. Seeds of *B. nigra* are used internally when it is an appetizer, digestive, diuretic, emetic, and tonic while *V. stipulacea* seeds are used in burns, epilepsy, fever, headache, and menstruation. *A. paeoniifolius* tubers are traditionally recommended for treatment of piles, abdominal disorders, asthma and rheumatism, elephantiasis, tumors, inflammations, vomiting, cough, bronchitis, asthma, anorexia, dyspepsia, colic, seminal weakness, fatigue, and anemia [16].

Table 2: Ethnomedicinal properties of documented medicinal wild vegetables

Sr. No.	Name of Wild Vegetables, Family, and Local Name	GPS Location	Edible Part Used	Season Of Availability	Commercially Sold	Frequency index (FI)	Method Of Consumption	Traditional Ethnomedicinal Values
1	*Amaranthus spinosus* L. (Amaranthaceae) Tandulaga	Latitude - 19*15'26"N Longitude - 77*40'48"E	Leaves and Stem	Rainy	No	40	Leaves cooked as vegetables.	Leaves and stems are fried and eaten for Jaundice [17].
2	*Capparis zeylenica* L. (Capparaceae) Waghati	Latitude - 19*16'32"N Longitude - 77*40'48"E	Fruits	Rainy	Yes	28	Immature fruits are chopped into small slices, boiled with water. After boiling, water is discarded for removing the bitter taste from fruits. Then these boiled slices are mixed with cereals for making vegetables.	Used in treating cholera, hemiplegia, pneumonia, helminthic and inflammatory activity [18].

3	*Amaranthus viridis* L. (Amaranthaceae) Kate-math	Latitude - 19*16'16"N Longitude - 77*41'20"E	Leaves	Rainy	No	35	Leaves cooked as a vegetable. (100 gm of leaves of *Amaranthus viridis*, 100 g of dried fruit of *Ficus carica*, and 75 g of sugar are mixed and ground together for 5-7 min. and given to patients suffering from vision problems).	Reduce labour pain and act an antipyretic, bruised leaves directly to eczema, psoriasis, and rashes, eye problems, to the treatment of asthma [19].
4	*Celosia argentea* L. (Amaranthaceae) Kuradu	Latitude - 19*16'13"N Longitude - 77*41'32"E	Leaves	Rainy and Winter	No	25	Leaves cooked as a vegetable.	A poultice of leaves, smeared in honey, is used as a cooling application to inflamed areas, relieve gastrointestinal disorders, and are antipyretic [12].
5	*Colocasia esculenta* L. (Schott.) (Araceae) Chamkura	Latitude - 19*16'22"N Longitude - 77*41'38"E	Leaves	Throug h-out year	Yes	38	Leaves and core of petiole are cooked as a vegetable.	Decoction of the peel is given as a folk medicine to cure diarrhea. Increases body weight, prevents excessive secretion of sputum in asthmatic individuals. Cooked vegetable contains mucilage and found to be an effective nervine tonic [20].
6	*Cordia dichotoma* L. (Boraginaceae) Bhokar	Latitude - 19*16'31"N Longitude - 77*41'19"E	Flowers and Fruits	Rainy	No	15	Flowers are used as a vegetable. Ripe fruits are also edible. (The decoction of fruits of *Cordia dichotoma* is given in a dose of 40-50 ml to treat diarrhea and intestinal worms. Fruit juice is also useful to remove excess phlegm from the lungs and treat cough, asthma).	Leaves are used in the treatment of dyspepsia, fever, diarrhea, leprosy, gonorrhea, and burning sensation. Leaf of plant traditionally shows the therapeutic uses and actions such as anthelmintic, astringent, diuretic, demulcent, purgative, expectorant, tonic, ulcer, and cough. Ripe fruits are used for the treatment of common cold, catarrh, cough, respiratory distress, and fever [21].
7	*Digera muricata* L. (Amaranthaceae) Kunjar	Latitude - 19*15'26"N Longitude - 77*40'48"E	Leaves	Rainy	Yes	18	Leaves and younger twigs are used as a vegetable. (Boiled leaves infusion given to mother after childbirth to increase lactation purpose and the crushing plant is used as a mild astringent in bowel complaints and antibilious).	The plant is cooling, astringent to the bowels in small doses and laxative in large doses; useful in biliousness. Flowers and seeds are useful in urinary discharges [22].

8	*Leunaea procumbens* Roxb. (Asteraceae) Pathari	Latitude - 19*16'20"N Longitude - 77*42'1"E	Leaves	Winter	No	23	Leaves cooked as vegetable.	Used as folk medicine in the treatment of rheumatism, kidney and liver dysfunctions, skin diseases, dysentery, and eye diseases [23].
9	*Momordica dioica* Roxb. (Cucurbitaceae) Kartoli	Latitude - 19*15'25"N Longitude - 77*40'52"E	Fruits	Rainy	Yes	29	Fruits are chopped into slices and mixed with a mug or udid dal for making vegetables. (In snakebite and scorpion stings, fruit paste is applied externally).	Fruits are used to cure asthma, leprosy, excessive salivation, prevent the inflammation caused by lizard, snake bite, elephantiasis, fever, mental disorders, digestive disorders, and troubles of heart, and treat discharge from a mucous membrane [24].
10	*Moringa oleifera* L. (Moringaceae) Shevga	Latitude - 19*16'34"N Longitude - 77*41'16"E	Flowers and Fruits	Winter	Yes	39	Flowers are cooked as a vegetable. Pods are also edible. (50-100 ml decoction of flowers and fruits is used to treat pneumonia).	*Moringa* flowers treat asthma, hyperglycemia, Dyslipidemia, flu, heartburn, syphilis, malaria, pneumonia, diarrhea, headaches, scurvy, skin diseases, bronchitis, eye, and ear infections [25].
11	*Portulaca oleracea* L. (Portulaceceae) Mothighol	Latitude - 19*15'26"N Longitude - 77*40'48"E	Aerial Plant (Leaves)	Rainy	Yes	12	Leaves mixed with tur or udid dal are cooked and eaten as a vegetable. (180 mg/day of purslane extract has been useful in dysentery).	A remedy for headaches, inflammation of the eyes and other organs, burning of the stomach, erysipelas, disorders of the bladder, numbness of the teeth, excessive sexual desire, burning fevers, worms, dysentery, hemorrhoids, eruptions of blood, and bites [26].
12	*Portulaca quadrifida* L. (Portulaceceae) Chotighol	Latitude - 19*16'17"N Longitude - 77*41'31"E	Aerial Plant (Leaves)	Rainy	Yes	15	Leaves mixed with tur or udid dal are cooked and eaten as a vegetable. (The dried aerial part of the plant is used in a dose of 9-15gm, to treat fever, cough, and asthma).	Leaves are used to treat asthma, cough, urinary discharges, inflammations and ulcers, abdominal complaints, and hemorrhoids [27].
13	*Tribulus terrestris* L. (Zygophyllaceae) Sarata	Latitude - 19*16'26"N Longitude - 77*41'18"E	Leaves	Rainy	No	6	Leaves cooked as a vegetable. (For sexual problems: 250 mg Tribulus powdered extract three times daily taken after meals for 3 months has been used for women. 500	The plant is used in folk medicines as a tonic, aphrodisiac, palliative, astringent, stomachic, antihypertensive,

							mg three times daily for 3 months has been used for men).	sexual problems, diuretic, lithotriptic, and urinary disinfectant [28].
14	*Commelina benghalensis* L. (Commelinaceae) Kena	Latitude - 19*15'25"N Longitude - 77*40'54"E	Leaves	Rainy	No	8	Leaves are used as a vegetable. (The paste of *Commelina benghalensis* is being applied externally to treat burns and leprosy).	Traditionally used for the treatment of many different diseases such as burns, leprosy, sore throat, pain, and inflammations and also uses as an emollient, demulcent, and laxative [29].
15	*Bambusa bambos* L. (Poaceae) Bamboo	Latitude - 19*16'20"N Longitude - 77*41'25"E	Young Shoots	Rainy	Yes	9	Young shoots of about 2 feet long are cut outer covering is removed then finely chopped, boiled and used as a vegetable. (The tender shoots of the Bamboo are also made into a paste and applied over the area affected with ringworms, wounds, and discoloration of the skin).	Used as astringent, acrid, sweet, cooling, expectorant, constipating, cardiotonic, hemostatic, aphrodisiac, and diuretic. The sprouts are acrid, bitter, and useful in inflammations, ringworms, ulcers, and wounds [30].
16	*Vigna stipulacea* L. (Fabaceae) Ran-mug	Latitude - 19*16'26"N Longitude - 77*41'18"E	Seeds	Rainy	No	2	Seeds cooked and eaten as "Sag" or locally called "Waran".	Decoction of leaves is used to treat as hyperacidity, nausea and vomitin seeds are used medicinally to treat burns, chest pains, epilepsy, fever, headaches and menstruation and in childbirth Decoction of leaves is used to treat as hyperacidity, na seeds are used medicinally to treat burns, chest pains, epilepsy, fever, headaches and menstruation and in childbirth Decoction of leaves is used to treat as hyperacidity, nausea, and vomiting Decoction of leaves is used to treat as hyper-acidity, nausea, and vomiting The gram is cooked with sour buttermilk. This is macerated well and taken once, preferably in the evening. While cooking, Pepper or

								dry ginger and little salt can be added this improves the digestive capacity.
17	*Coccinea grandis* L. (Cucurbitaceae) Tondule	Latitude - 19*16'16"N Longitude - 77*41'20"E	Fruits	Rainy	Yes	28	Unripened fruits are used as a vegetable with a mug or udid dal. (The fleshy green fruit is very bitter. Green fruit cures sores on the tongue and dried fruit removes eczema).	Macerated fruits are massaged onto swellings. Diarrhea, blood purifier, loss of appetite, and indigestion [17].
18	*Ficus racemosa* L. (Moraceae) Umber	Latitude - 19*16'29"N Longitude - 77*41'18"E	Fruits	Rainy	No	32	Unripened fruits are used as a vegetable. Ripened fruits are also edible. (A bath made of fruit and bark is regarded as a cure for leprosy).	Tender fruits are used as an astringent, stomachic, refrigerant, in dry cough, loss of voice, diseases of kidney and spleen, tonic, useful in the treatment of leucorrhea, blood disorder, burning sensation, fatigue, urinary discharges, leprosy, intestinal worms and carminative. They are also useful in miscarriage, spermatorrhoea, epididymitis, cancer, scabies, intrinsic hemorrhage, and excessive thirst [31].
19	*Casia tora* L. (Caesalpinaceae) Tarota / Takala	Latitude - 19*16'16"N Longitude - 77*41'33"E	Young Leaves	Rainy	No	27	Young leaves cooked as a vegetable. (The paste of leaves and seeds is applied topically on ringworms and scabies. The decoction of the whole plant is given as a vermifuge and purgative).	Leaves are useful in the treatment of leprosy, ringworm, bronchitis, cough, dyspepsia, cardiac disorders and it is the most popular ingredient in Ayurvedic formulation, “Chakramadha tailam” [32].
20	*Abelmoschus ficulneus* L. (Malvaceae) Ran-Bhendi	Latitude - 19*16'18"N Longitude - 77*41'35"E	Fruits	Rainy	No	19	Fruits are used as vegetable. Fruit extract (about one teaspoonful) is given twice a day for three days to cure abdominal pain.	The fruits are used as a treatment against diarrhea. A decoction of the crushed fresh root is taken to treat calcium deficiency [33].
21	*Hibiscus cannabinus* L. (Malvaceae) Ambadi	Latitude - 19*16'31"N Longitude - 77*41'20"E	Leaves	Rainy	Yes	29	Leaves cooked with tur dal for making "Waran". (The leaf extract of H. cannabinus has implications in the management of dysentery).	In Ayurvedic medicine, the leaves are used in the treatment of dysentery and bilious, blood and throat disorders. The seeds are aphrodisiac and stomachic [33].

22	*Hibiscus sabdariffa* L. (Malvaceae) Dev-ambadi	Latitude - 19*16'29"N Longitude - 77*42'34"E	Leaves	Rainy	Yes	31	Leaves cooked with tur dal for making "Waran".	Traditionally used for diuretic, choleretic, febrifugal, and hypotensive effects, decreasing the viscosity of the blood and stimulating intestinal peristalsis. Decoction of seeds is given to relieve pain in urination and indigestion [34].
23	*Cocculus hirsutus* L. (Menispermaceae) Vasan	Latitude - 19*16'33"N Longitude - 77*41'24"E	Leaves	Rainy	No	8	Leaves are used as a vegetable. (The decoction of the leaves, dried ginger, and Pippali (*Piper longum* L.) is given along with milk to treat dysentery and diarrhea).	The leaves are used to treat eczema, sores, cuts, wounds, and other skin disorders. Leaves are also used in the treatment of urine disorders, fever, leucorrhea, and acute gonorrhea. The leaves and stems are used in the treatment of conjunctivitis and other eye disorders. The leaf powder is given orally for the treatment of dysentery and diarrhea [35].
24	*Merremia emarginata* Burm. (Convolvulaceae) Undirkani / Bhokan	Latitude - 19*16'29"N Longitude - 77*42'34"E	Leaves	Rainy	No	4	Leaves are used as a vegetable. (In snake bite cases the juice of the leaves is given for drinking and the paste is used for application at the site).	Therapeutically used as a diuretic, Cough headache, neuralgia, and rheumatism [36].
25	*Solanum pimpinellifolium* L. (Solanaceae) Dorale	Latitude - 19*16'17"N Longitude - 77*41'31"E	Fruits	Winter	Yes	25	Unripened and ripened fruits are used with tur dal for making Waran. (The fruits slices are being applied externally to treat burns and scalds).	The pulped fruit is an extremely beneficial skin wash for people with oily skin. Sliced fruits are a quick and easy first aid treatment for burns, scalds, sunburn, rheumatism, and severe headaches [33].
26	*Chenopodium album* L. (Chenopodiaceae) Chil	Latitude - 19*16'15"N Longitude - 77*41'36"E	Leaves	Winter	Yes	18	Leaves cooked as vegetable. (*Chenopodium* oil is used to kill roundworms and hookworms in the intestine).	Used for urinary disorders and kidney stones, laxative, anthelmintic against round and hookworms, and blood purifier [37]. Its use is for the treatment of hepatic disorders, spleen enlargement, intestinal ulcers, and burns [38].

27	*Corchorus olitorius* L. (Tiliaceae) Chuch	Latitude - 19*16'34"N Longitude - 77*41'20"E	Leaves	Rainy	No	16	Young and tender leaves cooked as a vegetable.	Recommended for pregnant and nursing mothers because of their high iron content (Sibongokuhle Ndlovu et al. 2020). Leaves are used as herbal pharmacopoeia against malaria or typhoid fever [39].
28	*Bombax ceiba* L. (Bombaceae) Kate-shevar	Latitude - 19*16'14"N Longitude - 77*41'41"E	Flowers	Winter	No	12	Flowers cooked as vegetable. (1 tablespoon (10 gm) of coarse powder of the leaves is added with 2 cups of water. Boiled in open air till the total content is reduced to cup. This is filtered and used to treat diabetes).	Used by tribal communities for gastrointestinal and skin diseases, gynecological and urinogenital disorders, general debility, diabetes, and impotence [15].
29	*Blepharis repens* (Vahl.) Roth. (Acanthaceae) Hadsan	Latitude - 19*16'37"N Longitude - 77*40'48"E	Leaves	Rainy	Yes	2	Leaves are with mung dal for making vegetables. (Leaf juice boiled with sesame oil and applied externally to wounds).	This plant is used traditionally to treat bone fractures, skin diseases, urinary discharges, and allergies. The whole plant is highly medicinal, used against chronic fever and as a diuretic, aphrodisiac, and expectorant, and also for urinary discharges. Stem powder is also consumed to cure bone fractures [40].
30	*Citrullus colocynthis* L. (Cucurbitaceae) Ran-kakadi / Channi	Latitude - 19*16'13"N Longitude - 77*41'35"E	Fruits	Winter	Yes	19	Fruits are chopped and used with mung dal and also used for making pickles. (The fruits slices are being applied externally to treat burns, moisturizer for the skin, and abrasions).	Fruits are used as a cooling light cleanser or moisturizer for the skin, first aid treatment for burns, abrasions, and stomachic [33].
31	*Lagenaria siceraria* L. (Cucurbitaceae) Lauki	Latitude - 19*16'19"N Longitude - 77*41'29"E	Fruits	Winter	Yes	22	Fruits are used as a vegetable Also used for making "Paratha".	Useful role in the management of edema, hypertension, obesity, and related metabolic disorders [41]. It is traditionally known to be used for the treatment of diabetes, ulcer, jaundice, cardiovascular disease, hemorrhoids, and colitis [42].

32	*Cucurbita maxima* Duchesne. ex Lam. (Cucurbitaceae) Kaddu	Latitude - 19*16'13"N Longitude - 77*41'14"E	Fruits	Winter	Yes	18	Unripened fruits are used as a vegetable. Ripened fruits chopped, boiled, and eaten by adding some extra sugar. The pulp is applied to burns and scalds, inflammations, abscesses, and boils; it is also prescribed in migraine and neuralgia The pulp is applied to burns and scalds, inflammations, abscesses, and boils; it is also prescribed in migraine and neuralgia (The fruit pulp is applied to burns and scar inflammations).	The fruit pulp is used as a soothing poultice on burns, inflammations, and boils. A paste made from the fruit stalks is used to heal boils and earaches. Seeds are diuretic, tonic and vermifuge [33].
33	*Luffa cylindrica* L. (Cucurbitaceae) Parsa-dodaka	Latitude - 19*16'17"N Longitude - 77*41'18"E	Fruits	Winter	No	3	Unripened fruits are cooked as a vegetable. (Women use *Luffa* fruits to restore absent menstrual periods. Nursing mothers use it to increase milk flow).	Used to induce labour pain during childbirth, Snake-bite [14].
34	*Asteracantha longifolia* L. (Acanthaceae) Talimkhana	Latitude - 19*16'17"N Longitude - 77*41'31"E	Leaves and seeds	Winter	Yes	2	Leaves are used as vegetables and seeds are soaked in water for a night and edible. (1/2 teaspoon of seed powder with honey or milk for at least 1-2 months for male sexual dysfunction).	It is a source of the Ayurvedic drug Kokilaaksha an d the Unani drug Talimkhana. The seeds are acrid, bitter, aphrodisiac, tonic, sedative, and useful in diseases of the blood [43].
35	*Sesbania grandiflora* L. (Fabaceae) Hadga	Latitude - 19*16'27"N Longitude - 77*43'35"E	Flowers and Fruits	Throug hout year	No	6	Leaves, flowers, and fruits are used as a vegetable. (The leaves tonic useful in biliousness and nyctalopia).	The juice of the flowers is used as a popular remedy for nasal catarrh, and headache, head congestion, or stuffy nose. Flowers are used as emollient, laxative, aperitif and refrigerant, bronchitis, gout, aphrodisiacs, pain, thirst, and fever. The juice of the flower is squeezed into the eye to correct dim vision. In Ayurveda, fruits are used for anemia, bronchitis, fever, and tumors [44].
36	*Amorphophalus paeoniifolius* (Araceae) Surajkand	Latitude - 19*16'33"N Longitude - 77*43'2"E	Tuber	Throug hout year	Yes	4	Tubers are chopped, covered hand by any ointment (To avoid irritation during cutting the tuber), and then sun-dried. The cut slices/pieces are boiled in oil and then these boiled	Used traditionally for the treatment of piles, abdominal disorders, enlargement of spleen, asthma, and rheumatism. They are traditionally

							slices are used for cooking purposes.	used in arthralgia, elephantiasis, tumors, inflammations, vomiting, cough, bronchitis, asthma, anorexia, dyspepsia, colic, seminal weakness, fatigue, anemia, and general debility [16].
37	*Abelmoschus manihot* L. (Malvaceae) Ranbhendi	Latitude - 19*16'17"N Longitude - 77*41'34"E	Fruits	Winter	No	2	Fruits are chopped and cooked as a vegetable. a paste of the bark is used to treat cuts and wounds. (A paste of leaves is used to treat cuts and wounds).	A paste of the bark is used to treat wounds and cuts, with new paste being applied every 2 - 3 days for about 3 weeks. The juice of the flowers is used to treat chronic bronchitis and toothache [33].
38	*Brassica nigra* L. (Brassicaceae) Mohari	Latitude - 19*13'34"N Longitude - 77*40'20"E	Leaves and Seeds	Winter	No	15	Leaves are used as vegetables.	Mustard is used for treating epilepsy and toothache. The seed is also used internally when it is an appetizer, digestive, diuretic, emetic, and tonic [33].
39	*Solanum xanthocarpum Linn.* (Solanaceae) Ranwange	Latitude - 19*15'15"N Longitude - 77*40'28"E	Fruits	Winter	No	12	Fruits are used as a vegetable.	Fruit are diuretic, treatment of malaria, stomach aches, and problems with the spleen. The young fruits are used to improve eyesight [33].

4. CONCLUSION

The wild plants used by the indigenous peoples from remote pockets should be documented and assessed for their nutritional contents. These plants should also investigate for their medicinal values in the ethnomedicinal literature and compared for their uses from the different parts of the country it may lead to some important clues of their medicinal values. Such a type of documentation of wild edible vegetables from tribal peoples will enhance the understanding of indigenous knowledge systems. With time the indigenous knowledge about the plants used by the tribal peoples is on the verge of extension because of the social and economic changes taking place in the region, hence it is the need of the hour to document such knowledge systems and find innovative ways of tapping their potential for the welfare of human being. The present study revealed that the ethnic communities of the study area use diverse types of vegetables, fruit, flowers, seeds, and tubers are potential medicinal plants in use along with greater consensus for their usage also supports this statement. Wild vegetables are a rich source of minerals and protein that possess many biological compounds necessary for good health.

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