RESEARCH ARTICLE

Documentation of Wild Edible Leafy Vegetable Traditionally Used by Tribal and Rural Communities of North Maharashtra, India

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ABSTRACT
Number of wild edible plants is commonly used in the traditional diets of tribal people in many parts of the world. North Maharashtra is well known for its tribal region and tribes from this region partially or fully dependent on the wild resources for their nutritional requirements. The present study was designed to document specifically the wild leafy vegetables from North Maharashtra. A total of 62 traditionally used wild leafy vegetable species were collected, identified and documented. Out of 62 species, 61 species belong to Angiosperms and 1 belong to pteridophyte. With respect to families Amaranthaceae, Araceae, Asteraceae and Fabaceae were found to be the largest families with 29 species. Herbs are the major source of wild leafy vegetables with 43 species and forest is the home for the majority of wild leafy vegetables. Due to less awareness, loss of vegetation and fast erosion of traditional knowledge many species are on the line of rarity. The study helps to conserve those wild food species and cultivate them on large scales, to uplift their economic status and sustainable management in near future.

Keywords: Wild Edible Plants, Wild Leafy Vegetables, Traditional Knowledge, Nutritional Values, North Maharashtra

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INTRODUCTION

Wild edible plants (WEPs) refer to species that are neither cultivated nor domesticated, but are available from their wild natural habitat and used as the source of food (Kiran et al., 2019; Chakravartty et al., 2016). There are more than 8000 plants in the wild are edible and we are still using only a fraction of them. We are forgetting about all those nutritious plants which help us to survive on this planet thousands of years ago. The reason behind this is we are no longer giving value to our traditional knowledge and even most of the knowledge is undocumented (Shahseen et al., 2017). Still in this modern era in some tribal and rural parts of the world utilizing WEPs traditionally as a major source of food (Shahseen et al., 2017, Thakur et al., 2017). Tribals and rural communities have accurate knowledge of wild food resources due to their long association with nature (Kulkarni et al, 2015).

They are partially or fully dependent on the wild food resources for their nutritional requirements. (sasi et al., 2011). Wild edible plants not only provide quantity but also make a significant contribution to the population’s nutrition throughout the year. WEPs may help to meet the increasing demands of the growing population (Sasi et al., 2011, Shahseen et al., 2017). Increased use of traditional vegetables can contribute to enhancing people’s health and standard living as well as the economic and social status of the food producers themselves (Bhogaonkar et al., 2010). The amorphous nature of this traditional knowledge about WEPs renders it difficult to capture and conserve (Vasundhara et al., 2015). (WEPs) sustaining the life of tribal and rural communities by providing the food and nutrition such as essential amino acids, vitamins, and minerals to stay healthy. Unfortunately, the traditional knowledge on the use of WEPs is vanishing due to the modernization, and there is a need to document the traditional knowledge associated with a particular tribe (Thakur et al., 2020). Unless efforts are made to educate the younger generations about their importance, this valuable knowledge may be lost in the near future. (Bhogaonkar et al 2010). It is the prime goal of modern ethnobotany to document and preserve that traditional knowledge on the use of WEPs (Shahseen et al., 2017).

The tribal and rural population of North Maharashtra has a very long tradition of the close relationships with wild plants. The number of wild edible plants is used by them to meet their nutritional, medicinal and economical demand. Various parts of these plants such as leaves, shoots, tubers, fruits, seeds, etc. are consumed safely by them. Among various part leaves are the most widely consumed part. In the rainy season tribal population is partially or fully dependent on wild leafy vegetables (WLVs) available in their environment to make many popular traditional dishes.

Several studies have been done on exploring the consumption of WEPs by local people in the North Maharashtra. Patil and Patil (2000) reported WEP species from Nashik district. Borse and Patwardhan (2011) enumerated WEP species from Thane and Nashik district of Maharashtra. Jadhav et al., (2015) presented a comprehensive checklist of WEP species from Northern Western Ghats of Maharashtra. Kuvar and Shinde (2019) documented the WEP species used by the Kokni tribal of the Nashik district of Maharashtra. Kshirsagar et al., (2012) documented wild fruits of North Maharashtra. Literature survey shows less work has been done specifically on wild leafy vegetables from Nashik, Dhule, Nandurbar district of North Maharashtra.

Hence the present study was made to explore, identification and documentation of wild edible leafy vegetables (WLVs) used by the tribal and rural communities of North Maharashtra, particularly from Nashik, Dhule, Nandurbar district of North Maharashtra, which will help to conserve those plants for future generations and traditional knowledge before whipping out.

STUDY AREA

This study is carried out in the North Maharashtra region, specifically Nashik, Nandurbar, Dhule district. This region is situated on the northern side of the Indian state of Maharashtra. It occupies 18.65% of the total area and holds 16.53% of the total population of Maharashtra. The region contains the largest 41.24% tribal population of the total tribal population of Maharashtra Aborigines are inhabited in this region such as Bhil, Bhil Garsia, Kohna, Kohni, Kubna, Dongar Koli, Gamiit, Gumta, Gavit, Pardi, Warli, Tadvi, Advichincher, etc.. Most of the forest area is located in two main mountain ranges of North Maharashtra: the range of Western Ghats stretches from north to south across the western portion while the Satpura range stretches from east to west across the northern portion of North Maharashtra. The total forest area is 9.23 lakh hectares which is 16.07% of the total geographical area of the region. It consists of tropical dry deciduous forest. Temperature varies between 12°C to 46°C. Rainfall is not uniform all over the region. Western hilly regions receive very high rainfall (2600 mm) as compared to other parts of the region (700 mm). North Maharashtra has a tropical climate, with three distinct seasons: very hot and dry summer (March-May), Monsoon (June-September), cool and dry winter (October-February). It is rich in biodiversity and varying geographical conditions have ideal for the growth of a
variety of plants. Many WLV species existing naturally in forest, cultivated, and wastelands of the region.

METHODOLOGY

Field survey was conducted in the forest, tribal and rural areas of North Maharashtra for the period of 2017-2020. The data was collected through discussions and interviews with tribal and rural peoples. The plant specimens were collected and identified with the help of Flora of Maharashtra, Flora of Nashik District, and experts in the field of taxonomy. It was confirmed by repeated inquiries in different seasons. Local food markets where the leaves are sold were also done so that seasonal availability and demand can be assessed. Data were collected about the habit, habitat, local names, method of collection of edible leaves, method of consumption and storage, seasonal availability. Collected data were documented in the tabulated form with respect to their botanical name (according to alphabetical order), habit, edible parts, season of availability, methods of consumption, etc.

STATISTICAL ANALYSIS

Documented information was analyzed using Microsoft Excel.

RESULT AND DISCUSSION

In this present study, 62 species of wild leafy vegetables eaten by tribal and rural peoples across the North Maharashtra have been documented and detailed information regarding scientific name, local names, family, habit, edible parts, seasonal availability, methods of consumption, frequency of use has been elaborated in Table 1. Out of 62 species, 61 species belong to Angiosperms and 1 belong to Pteridophyte. 62 species belong to 26 families. Among these Asteraceae, Fabaceae, Amaranthaceae and Araceae were found to be the largest families with 29 species of WLV’s and the rest are represented 01 to 03 species (Detail information is illustrated in Fig. 3). Herbs are the major source for WLV’s with (43 species) followed by trees (07), climbers (07) and shrubs (05) (Fig. 2).

Figure 1: Map of Maharashtra showing study sites.

Figure 2: Life forms of WLV species in study region

WLV’s are consumed traditionally through appropriate means of collection, preparation and preservation techniques. Different communities have different modes of consumption across North Maharashtra. Generally, young leaves and tender shoots are used. Method of preparation various species to species. Some vegetables are chopped before use while some directly use. Some vegetables need to boil before preparing recipes/ dishes to remove bitterness/antinutrients/poisonous components. Simple ingredients such as onion, garlic, chilies, local oil, salts are only used. Wild spices are generally used as ingredients to bring delicious taste to recipes.

Leaves of Trachyspermum ammi, Begonia crenata, Abrus precatorius, Oxalis corniculata, Portulaca oleracea, Ocimum americanum are so delicious that they are also eaten as raw. Celosia argentea, Alternanthera sessilis, Chenopodium album, Basella alba, Portulaca oleracea, Rumex vesicatorius, Coccosia esculenta are some of the species that occurs in the agricultural field as weed and are widely consumed by rural peoples. Tribes from Trimbakeshwar and Surgana region of Nashik district sundry the leaves of Sauromatum venosum and Cicer arietinum and stored for their use in off season also.
**Heracleum grande**, *Celosia argentea*, *Sauronatum venosum*, *Amorphophallus commutatus*, *Colocasia esculenta*, *Apiopis peltata*, *Chlorophyllum tuberosum*, *Guizotia abyssinica*, *Vernonia anthelmintica*, *Clerodendrum serratum*, etc. are some of the widely consumed leafy vegetables in the tribal regions. So, they are in great demand in the local markets. Above species are occurs only in forest and not cultivated. As a result, these species are exploiting on large scale for commercial purposes. Therefore, the number of these species is decreasing day by day. The wild edible plants are the plants that grow spontaneously in self-maintaining populations in the natural or semi-natural ecosystem and exist independently of direct human action (FAO, 1999). So, there is an urgent need to reduce exploitation on large scale and aware to increase the number of these species to keep the traditional source of healthy food alive.

The peak season of availability of WLV’s is the rainy season (June to October) (Table 1 and Fig. 4). Wild leafy vegetables grow in different localities (Detail information is illustrated in Fig.5). Forest is the home for the majority of WLV’s. Most of the species of WLV’s occurs and consumed in tribal regions than the rural region across North Maharashtra. Species that occur in tribal regions are different from species that occur in rural regions in the study area. *Colocasia esculenta* and *Chlorophyllum tuberosum* for leaves and rhizomes, *Ocimum tenuiflorum*, *Trachyspermum ammi*, *Hibiscus cannabhinus*, *Asparagus racemosa*, *Abras precatorius*, *Rumex vesicarius* for leaves, *Sesbania grandiflora*, *Basella alba*, *Moringa oleferia* for leaves and fruits, are some species that have been growing by some tribal and rural peoples in their kitchen garden and on boundaries of agricultural field. *Carrhalus tinctorius*, *Rumex vesicarius*, *Chenoepodium album* and *Colocasia esculenta* are cultivated on small scale by rural peoples in some parts of the study region and commercially sale in local and urban food markets. The introduction of WLV’s into the agricultural system can boost tribal and rural employment and generate income.

Despite the nutritional and medicinal importance, most of the WLV’s are underutilized due to a lack of awareness and bioprocessing techniques. The need is to increase the awareness towards the the nutritional potential of wild leafy vegetables for sustainable development and empowerment of tribal region. The survey revealed several threats to wild plant species. The rapid erosion of traditional knowledge is one of the major threat, as this knowledge is considered to be the basis for their utilization (Shaheen et al., 2017). Due to socio-economical changes younger generations are not showing interest to carry out this knowledge practically. Another threat is loss of vegetation and utilization of land for cash crops which causes loss of these valuable food resources from their natural habitat (Yadav et al., 2012). The biggest challenges are to acquire and conserve the amorphous nature of this traditional knowledge (Vasundharan et al., 2015). Lack of traditional knowledge and scientific information is depriving these plants from using completely.

**CONCLUSION**

Present work defines the diversity of wild edible leafy vegetables used as food by tribal and rural communities of North Maharashtra in order to sustain their life. These edible plants provide food and nutrition such as vitamins, essential amino acids, minerals to stay healthy. Unfortunately, due to the modernization the traditional knowledge on the use of wild edible plants is vanishing. Present data helps in the conservation and management of these species. Wild leafy vegetables will help to screen out alternative healthy food resources to reduce the food insecurity and malnutrition problem throughout the world. In the future, it may play an important role in increasing global food diversity sustainably. Study suggests that efforts are needed to create awareness towards the use of WLV’s to enhance the demand. Increase demand will encourage people to increase the area under cultivation for sustainable development and empowerment of local communities.

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Figure 3: Familywise distribution on WLV species in the study region

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Figure 4: Availability of WLVs in the study region

Figure 5: WLVs located in different habitats
Plate 5

In tribal parts Colocassiaesculenta is planted in kitchen
garden for leaves and
rhizomes.

Tribal women collecting
leaves of Hibiscus canadensis
from kitchen garden

A rural man eating
Pontederiaoleracea as raw

Interview with tribal women for
documentation of WLVs. (Giving
information about how to prepare
Anomorphallax sps. for cooking)

Plate 6

In some parts of study region, some local tribes collect wild food
on seasonal availability from the forest and sit on the side of the
road to sell them.

Collecting information from local tribal women selling wild
leafy vegetables
Table I: Wild leafy vegetables used by tribal and rural communities of North Maharashtra

| Sr No | Botanical Name                  | Local Names | Family      | Edible Parts          | Methods of Consumption                                      | Habit   | Seasonal availability | Frequency of use |
|-------|--------------------------------|-------------|-------------|-----------------------|-------------------------------------------------------------|---------|-----------------------|------------------|
| 1     | Abrus precatorius L.            | Gunj        | Fabaceae    | Leaves                | Leaves eaten raw or used in Paan                           | Shrub   | Aug.-March            | Rarely            |
| 2     | Achyranthes aspera L.           | Aagthedha   | Amaranthaceae| Leaves               | as vegetable                                              | Herb    | June-Oct.             | Rarely            |
| 3     | Acmella paniculata (Wall.ex DC.) | Akkal-kara  | Asteraceae   | Leaves                | as vegetable                                              | Herb    | Sept. Jan.           | Rarely            |
| 4     | Alternanthera sessilis L.        | Tandumula   | Amaranthaceae| Leaves               | as vegetable                                              | Herb    | June-Oct.             | Commonly          |
| 5     | Amaranthus spinosus L.          | Kate math   | Amaranthaceae| Leaves               | as vegetable                                              | Herb    | June-Dec             | Commonly          |
| 6     | Amaranthus viridis L.           | Math        | Amaranthaceae| Leaves                | as vegetable                                              | Herb    | June-Dec             | Commonly          |
| 7     | Amorphophallus commutatus (Schott) Engl. | Sheval/ Badadya | Araceae        | Leaves and Inflorescences | as vegetable                                              | Herb    | Leaves: July-Oct. Flower: May-June | Commonly          |
| 8     | Amorphophallus paconifolius (Dennst.) Nicolson | Suran | Araceae        | Leaves and Tubers    | as vegetable                                              | Herb    | Leaves: June-Nov. Tuber: Nov.-March | Commonly          |
| 9     | Ariopsis peltata Nimmo.         | Khadak triti | Araceae    | Leaves                | as vegetable                                              | Herb    | June – Nov.          | Commonly          |
| 10    | Arisacna murrayi (J.Graham)Hook. | Badade      | Araceae    | Leaves                | as vegetable                                              | Herb    | June-Sept.           | Commonly          |
| 11    | Asparagus racemosus wild.       | Shatavari   | Asparagaceae | Leaves               | as vegetable                                              | Climber | June- Dec.          | Rarely            |
| 12    | Arthryum hocknackerianum (Kze.) | Akari       | Aspleniaceae (Pteridophytic Plant) | Leaves        | as vegetable                                              | Herb    | June – Sept.         | Commonly          |
| 13    | Basella alba L.                | Mayalu      | Basellaceae  | Leaves                | as vegetable                                              | Climber | Throughou t the year | Commonly          |
| 14    | Bauhinia purpurea L.            | Kuharool    | Fabaceae    | Leaves and Flowers    | as vegetable                                              | Tree    | Leaves: June-Nov. Flowers: Jan.-April | Commonly          |
| 15    | Begonia crenata Drynad.         | Ambada      | Begoniaceae  | Entire plant          | Entire plant eaten as raw and also used as a vegetable.   | Herb    | June – Oct.          | Commonly          |
| 16    | Carthamus tinctorius L.         | Kardai      | Asteraceae   | Leaves and Seeds     | Leaves are used as a vegetable while oil is extracted from seeds. Oil is used for cooking purposes. | Herb    | Throughou t the year | Commonly          |
| 17    | Celosia argentina L.            | Kurdu       | Amaranth-aceae| Leaves               | as vegetable                                              | Herb    | June-Oct.            | Commonly          |
| 18    | Chenopodium album L.            | Chil        | Amaranth-aceae| Leaves               | as vegetable                                              | Herb    | June-March           | Commonly          |
| 19    | Chlorophyrium tuberosum (Roxb.) | Kulee       | Asparagaceae  | Leaves               | as vegetable                                              | Herb    | June-Oct.            | Commonly          |
| 20    | Cicer arietinum L.              | Harbara     | Fabaceae    | Leaves                | as vegetable                                              | Herb    | Throughou t the year | Commonly          |
| 21    | Clerodendrum serratum (L.) Moon | Bharangi    | Lamiaceae    | Young leaves and Flowers | Young leaves and flowers used as vegetable               | Shrub   | June – Nov.          | Commonly          |
| Sr No. | Botanical Name                  | Local Names | Family          | Edible Parts | Methods of Consumption | Habit    | Seasonal availability | Frequency of use |
|--------|--------------------------------|-------------|-----------------|--------------|------------------------|----------|-----------------------|------------------|
| 22     | Cocculus hirsutus (L.)         | Vasanvel    | Menispermaceae  | Leaves and Fruits | as vegetable           | climber  | Jan.- April          | Rarely           |
| 23     | Colocasia esculenta (L.) Schott | Alu cha Khand | Araceae         | Leaves and Tubers | as vegetable           | Herb     | Leaves: June-Dec. Tubers: Nov.-Feb. | Commonly          |
| 24     | Commelina benghalensis L.     | Kena        | Commelinaceae   | Leaves        | as vegetable           | Herb     | June-Oct.            | Rarely           |
| 25     | Commelina diffusa L.          | Kena        | Commelinaceae   | Leaves        | as vegetable           | Herb     | June-Oct.            | Rarely           |
| 26     | Corchorus olitorius L.       | Chunch      | Malvaceae       | Leaves        | as vegetable           | Herb     | June-Nov.            | Rarely           |
| 27     | Crotalaria juncea L.          | Taag        | Fabaceae        | Leaves        | as vegetable           | Shrub    | June-Oct.            | Rarely           |
| 28     | Digera muricata (L.)Mart.     | Ram aghada  | Amaranthaceae   | Leaves        | as vegetable           | herb     | Sept.- Jan.          | Rarely           |
| 29     | Dioscorea hispida Denst.      | Ulashi      | Dioscoreaceae   | Tender shoots | As vegetables          | Climber  | June-Oct.            | Commonly          |
| 30     | Dioscorea pentaphylla L.      | Chaicha mohar | Dioscoreaceae   | Flowers and Tender shoots | Flowers & tender shoot used as vege. | Climber  | Tender shoot: June-Oct. Flowers: Aug.- Oct. | Commonly          |
| 31     | Diplocyclos palmatus (L.) C. Jeffrey | Shankar vel/Shivlingi | Cucurbitaceae | Leaves        | as vegetable           | Climer    | June-Dec.            | Rarely           |
| 32     | Glossocordia hosaillia (LL)DC.| Jangli shepu | Asteraceae      | Leaves        | as vegetable           | Herb     | July-Nov.            | Rarely           |
| 33     | Guazotia abyssinica (LL) Cass.| Khurasni    | Asteraceae      | Leaves and Seeds | Leaves used as vegetable. Oil is extracted from seeds. | Herb     | June - Nov.          | Commonly          |
| 34     | Heracleum grande (Dalzce-Gibson) Mukhop | Baphali | Apiaceae       | Leaves and Seeds | Leaves used as vegetable & Seeds used as chutney & Spicy condiment | Herb     | Leaves: June-Nov. Seeds: Oct.-Dec. | Commonly          |
| 35     | Hibiscus cannabinis L.        | Ambadi      | Malvaceae       | Leaves        | as vegetable           | Herb     | June-Dec.            | Commonly          |
| 36     | Hibiscus sabdariffa           | Lal Ambadi  | Malvaceae       | Leaves and Flower | Leaves are eaten as a vegetable while flowers are eaten raw | Herb     | June-Nov.            | Commonly          |
| 37     | Impatiens balsamina L.        | Terda       | Balsaminaceae   | Leaves        | as vegetable           | Herb     | June-Oct.            | Rarely           |
| 38     | Impatiens inconspicua Benth. Ex Wight & Arn. | Gulabi Terda | Balsaminaceae | Leaves and Seeds | Leaves are used as vegetable. Seeds are eaten as raw | Herb     | July-Oct.            | Rarely           |
| 39     | Ipomea aquatica Forssk.       | Naeichi Bhaji | Convolvulaceae | Leaves        | as vegetable           | Climber  | June – Oct.          | Commonly          |
| 40     | Lagerstroemia parviflora Roxb. | Bondara     | Lythraceae      | Young leaves  | Added into Amorphophallus commutatus vegetable to remove itching. | Tree     | Throughou the year | Commonly          |
| 41     | Launaea procumbens (Roxb.)    | Pathri      | Asteraceae      | Leaves        | as vegetable           | Herb     | Throughou the year  | Commonly          |
| Sr No. | Botanical Name                     | Local Names   | Family       | Edible Parts                           | Methods of Consumption          | Habit | Seasonal availability | Frequency of use |
|-------|-----------------------------------|---------------|--------------|----------------------------------------|---------------------------------|-------|----------------------|-------------------|
| 42    | Leea asiatica (L.) Ridsdale       | Dinda         | Vitaceae     | Leaves and young shoots                 | as vegetable                    | Tree  | June-Nov.            | Commonly          |
| 43    | Leea indica (Burm.f.) Merr.       | Dinda         | Vitaceae     | Leaves and young shoots                 | as vegetable                    | Tree  | June-Dec.            | Commonly          |
| 44    | Leea macrophylla Roxb.            | Sapud         | Vitaceae     | Young leaves and Young flowers          | as vegetable                    | Shrub | June-Oct.            | Rarely            |
| 45    | Moringa oleferia Lam.             | Shevga        | Moringaceae  | Leaves, Flowers and Young pod           | as vegetable                    | Tree  | Throughout the year  | Commonly          |
| 46    | Ocimum tenuiflorum                | Ran tulas     | Lamiaceae    | Leaves and Seeds                       | Leaves are eaten raw or add in preparation of tea. Seeds are used in preparing sharbat | herb  | Throughout the year  | Commonly          |
| 47    | Oxalis corniculata L.             | Ambushi/Jharjiura | Oxalidaceae | Leaves                                   | as vegetable                    | Herb  | June-Dec.            | Rarely            |
| 48    | Portulaca oleracea L.             | Ghol          | Portulacaceae| Leaves                                  | as vegetable                    | Herb  | Throughout the year  | Commonly          |
| 49    | Portulaca quadrifida L.           | Chigal/Chiwa  | Portulacaceae| Leaves                                  | as vegetable                    | Herb  | Sept.-Jan.           | Commonly          |
| 50    | Raphanus sativus L.               | Mula          | Brassicaceae | Leaves and Roots                        | Leaves are used as a vegetable. Roots are eaten as raw as salad and also used as a vegetable | Herb  | Throughout the year  | Commonly          |
| 51    | Rumex vesicarius L.               | Chuka/ambat chukka | Polygonacae | Leaves                                  | as vegetable                    | Herb  | Aug-Jan.             | Commonly          |
| 52    | Sauromatum venosum (Dryand. Ex Aiton) Kunth | Loth       | Araceae      | Leaves                                  | as vegetable                    | Herb  | June-Sept.           | Commonly          |
| 53    | Schrebera sweitenioides Roxb.     | Mhoka/Moki    | Oleaceae     | Leaves                                  | as vegetable                    | Tree  | June-Nov.            | Commonly          |
| 54    | Senna occidentalis (L.) Link.     | Ran-takala    | Fabaceae     | Young leaves and Seeds                  | Young leaves are used as vegetable. Seeds are roasted and eaten | Shrub | June-Oct.            | Rarely            |
| 55    | Senna tora (L.) Roxb.             | Torota/Takala | Fabaceae     | Young leaves and seeds                  | Young leaves are used as vegetable. Seeds are roasted and eaten | Herb  | June-Nov.            | Rarely            |
| 56    | Sesbania grandiflora (L.) Pers.   | Hadga         | Fabaceae     | Leaves, Flowers and Young pod           | as vegetable                    | Tree  | Throughout the year  | Leaves rarely     |
| 57    | Smithia conferta J.E. Smith.      | Kaula         | Fabaceae     | Leaves                                  | as vegetable                    | Herb  | June-Oct.            | Flowers commonly  |
| Sr No. | Botanical Name                  | Local Names | Family            | Edible Parts | Methods of Consumption | Habit | Seasonal availability | Frequency of use |
|-------|--------------------------------|-------------|-------------------|--------------|------------------------|-------|----------------------|------------------|
| 58    | *Sonchus oleraceus* L.         | Mhatara     | Asteraceae        | Leaves       | As vegetable           | Herb  | June-Sept.           | Rarely           |
| 59    | *Trachyspermum ammi* (L.) Sprague | Ova         | Apiaceae          | Leaves       | Leaves are used to prepare chutney and also eaten as raw | Herb  | Throughout the year  | Rarely           |
| 60    | *Tribulus terrestris* L.       | Gokhru/ Sarata | Zygophyllaceae    | Leaves       | as vegetable           | Herb  | Throughout the year  | Rarely           |
| 61    | *Vernonia anthelmintica* (L.) Willd. | Donger jira | Asteraceae        | Leaves       | as vegetable           | Herb  | July- Nov.           | Commonly         |
| 62    | *Vernonia cinerea* L.          | Sahadevi    | Asteraceae        | Leaves       | as vegetable           | Herb  | June-Oct.            | Rarely           |