

## **WILD EDIBLE VEGETABLES FROM WESTERN HILLY REGION OF AHMEDNAGAR (MAHARASHTRA, INDIA)**

**R.D. Borse<sup>1</sup> M. B. Gunjal<sup>2</sup>**

1. Department of Botany, Arts, Science and Commerce College, Satral, Tal-Rahuri, Ahmednagar, MH, India, [rdborse@gmail.com](mailto:rdborse@gmail.com)
2. Department of Botany, P.V.P. College Pravaranagar, Tal- Rahata, Ahmednagar, MH, India, [maheshgunjals@gmail.com](mailto:maheshgunjals@gmail.com)

### **Abstract:**

Approximately 60% of populations in underdeveloped countries residing in agricultural and forest areas, from nearby habitat they harvest various plant parts such as roots, leaves, fruits, and nuts which forms an integral part of their daily diets. Ahmednagar is one of largest districts in western Maharashtra and consists of both hilly area and deccan plateau plain land. It is situated in the rain shadow region of the Western Ghats, whereas the northwestern region comes under the hilly region of western ghats and receives plenty of rain resulting in flourishing biodiversity. A survey was conducted in Akole and Sangamner areas of Ahmednagar to find out the information about wild vegetables utilized by natives as a source of food. A total of 62 plant species of wild vegetables belonging to 59 genera and 23 families were reported edible from the selected area. The fabaceae was the most dominant family (14%), followed by Amaranthaceae (12%), Cucurbitaceae (8%), These three families contributed about 35% of the wild vegetables used in the study area.

**Keywords:** Wild vegetables, Akole, Sangamner, Survey, Plants

### **Introduction:**

Earlier than Human civilization man had been using wild edible plants as a food because of their rich nutritional value and therapeutic importance. These plants play a significant role in their livelihoods [1]. Approximately 60% of populations in

underdeveloped countries reside in agricultural and forest areas and harvest various plant parts from nearby habitats such as roots, leaves, fruits, and nuts which forms an integral part of their routine diets[2]. These wild edible plants not only act as alternatives to cultivated food during periods of food scarcity but they also play as a valuable supplement for a nutritionally balanced diet [3]. There are nearly 45,000 species of wild plants out of which 9,500 species are considered as ethno-botanically important species. [4]

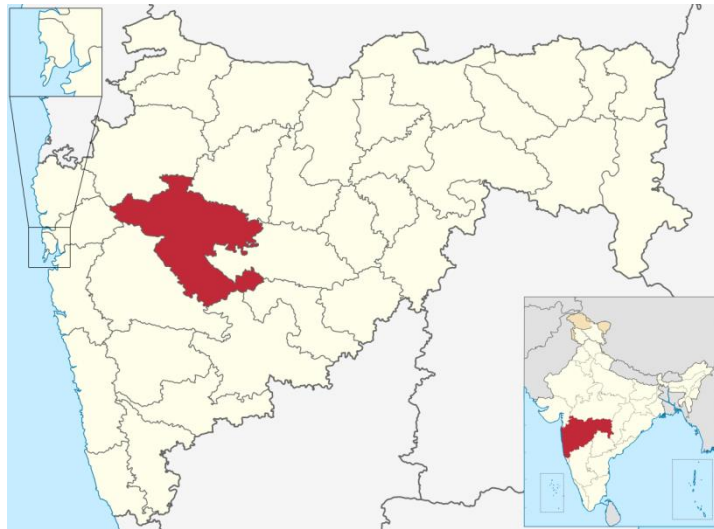
Wild edible plants consist of plant species which grow spontaneously in self-maintaining populations in natural or semi-natural ecosystems [5]. These wild species include all vegetables that are collected (not cultivated), whether they are collected in agricultural areas, barren land, non-cultivated areas, or forestland [6]. Since time immemorial, the tradition of collection of wild edible vegetables has been inculcated in many asian and african communities [7]. Rural tribal communities are considered experts in particular to make use of wild vegetables to supplement their diets, which is based on rainfed cultivation of staples cereals and pulses [8, 9]. The Western Ghats is a mountain range that covers an area of 160,000 km<sup>2</sup> (62,000 sq mi) in a length of 1,600 km (990 mi) parallel to the western coast of the Indian peninsula, from which Maharashtra constitutes an area of 52,000 km<sup>2</sup> [10]. Ahmednagar is one of largest districts in western Maharashtra and consists of both hilly area and plain land. It is situated in the rain shadow region of the Western Ghats, whereas the northwestern region comes under the hilly region of Western Ghats and receives plenty of rain resulting in flourishing biodiversity. The northwestern region of Ahmednagar is composed of two tehsils Sangamner and Akole. These two tehsils consist of Hilly areas covered by three mountain ranges such as Adhala, Baleshwar and Kalsubai. By the impacts of the tallest peaks of the mountain, this region is one of the richest in terms of vegetation and diversity in western ghat. The indigenous peoples residing in the untouched and mountainous area fulfill their food needs by using the natural resources available in the nearby habitats such as uncultivated areas, grassland, mountain scape, forest and barren land. earlier studies are only concentrated in Akole tehsil and reported 31 species of wild vegetables belonging to 23 families. As the earlier studies suggested that there is need for further research, a survey was conducted in

selected areas to find out the information about wild vegetables utilized by natives as a source of food.

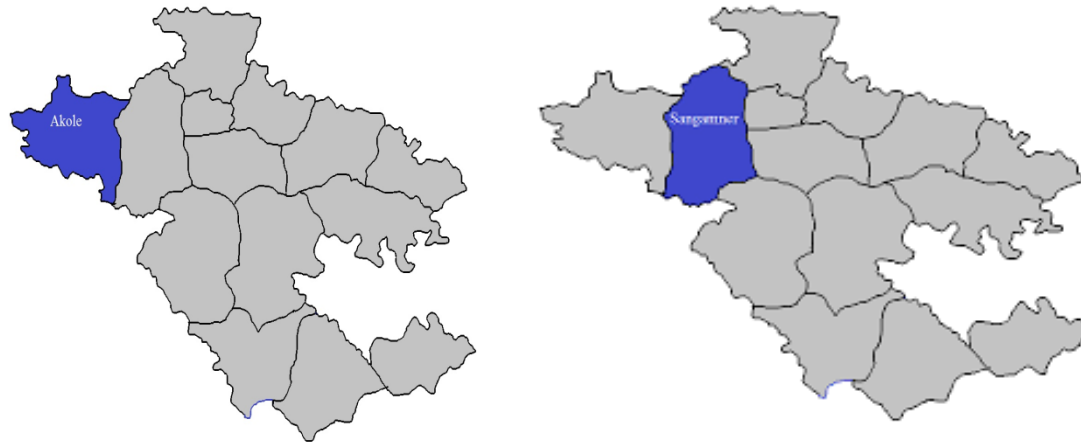
### **Materials and methods:**

#### **Study area:**

Geographically, Ahmednagar district is the largest district in the state of Maharashtra. Sangamner and Akole are tehsil places in Ahmednagar district, Maharashtra state, well covered by the mountains of Sahyadri Fig, 1.



Ahmednagar in Maharashtra



Akole in Ahmednagar

Sangamner in Ahmednagar

Fig 1. Location map

### **Reconnaissance Survey and Selection of Study Sites and Informants**

A reconnaissance survey was conducted throughout the year to have an overview of the terrain and potential informants, and to select study sites. Study villages were selected based on basins of three rivers. Before the survey, a semi-structured questionnaire was designed. In each selected village, a purposive sampling method was employed to identify key informants and respondents. Key informants were selected for interviews with assistance of the local villagers.

### **Ethnobotanical Data Collection**

Ethnobotanical techniques were employed to collect data on the utilization and management of wild vegetables. The information was collected from the local community using semi-structured interviews, focus group discussions, ecological surveys, market surveys. Information regarding the local names of plant species, growth forms, part (s) used, availability in natural resources, method of processing and vegetable preparation was carefully recorded.

### **Ecological Surveys**

For the ecological inventory of wild vegetables, forest walks were done by a team accompanied by the key informants in the different communities. The opportunistic

sampling technique was exploited in the survey for wild vegetables with each sampling site geo-referenced using a Google map. Based on the ethnobotanical information obtained from informants', plant specimens with their vernacular names were collected. Further identification of all plant specimens was done using flora such as Flora of Maharashtra and Flora of Bombay Presidency.

## **Results and discussion:**

### **Indigenous Knowledge**

Most of the local community members with good knowledge of and use of wild vegetables belonged to the older generation between the ages of 50 and 80. Whereas the least are the younger generation below the age of 40. It was also noted that most of the household members involved in tendering these vegetables are women across all age categories.

### **The wild vegetables**

The diversity of plants used as vegetables in the North western region of Ahmednagar shown in Table 1. A total of 62 species in 59 genera of 32 families were identified. The most common life forms used were herbs, vegetable. Kolhe (2009) reported A total of 31 plant species of wild vegetables belonging to 23 families were reported from the study area [11]. Similar results were obtained by Khayde et al. (2009). from Akole tehsil [12].

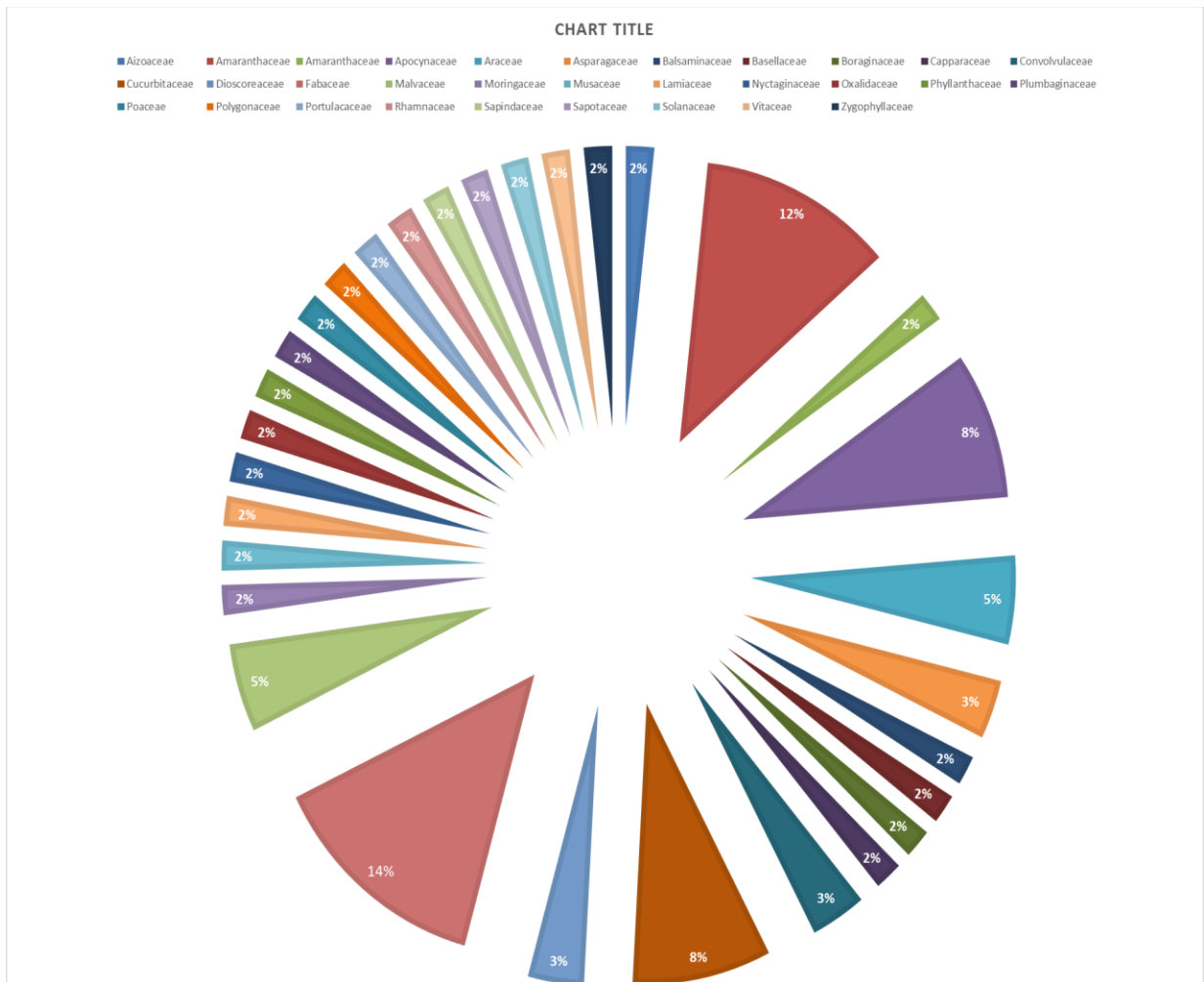


Fig 2: Families of wild vegetables with percentage of genera

The fabaceae was the most dominant (14%), followed by Amaranthaceae (12%), Cucurbitaceae (8%), These three families contributed about 35% of the wild vegetables used in the study area. The other families with their respective consumption percentages are shown in Figure 2.

**Conclusion:**

Most of the local community members with good knowledge of and use of wild vegetables belonged to the older generation between the ages of 50 and 80. Whereas the least are the younger generation below the age of 40. So emphasis should be given to find

out any cultivation method of these wild vegetables. Also further research should be carried out to find out medicinal properties of these vegetables.

### **References:**

1. Jadhav V. D., Mahadkar S. D. and Valvi S. R. Documentation and ethnobotanical survey of wild edible plants from Kolhapur district, *Recent Research in Science and Technology* 2011, 3(12): 58-63.
2. Narzary, H., Brahma, S. and Basumatary, S. ; Wild Edible Vegetables Consumed by Bodo Tribe of Kokrajhar District (Assam), North-East India. *Asian J. Plant Sci. Res.*, 2013, 3(6):95-100.
3. Vaishali S. Kamble and Dr. Varsha D. Jadhav, Traditional Leafy Vegetables: A Future Herbal Medicine, *International Journal of Agricultural and Food Science* 2013, 3(2): 56-58.
4. Vaishali S. Kamble and Dr. Varsha D. Jadhav, Traditional Leafy Vegetables: A Future Herbal Medicine, *International Journal of Agricultural and Food Science* 2013, 3(2): 56-58.
5. Heywood, V. Use and potential of wild plants in farm households. *FAO Farm Systems Management Series*. Food and Agriculture Organisation, Rome, Italy, 1999.
6. Termote, C.; van Damme, P.; Djailo, B. D. Eating from the wild: Turumbu, Mbole and Bali traditional knowledge on non-cultivated edible plants, District Tshopo, DR Congo. *Genetic Resources and Crop Evolution*, v. 58, n. 4, p. 585-618, 2011.
7. Asfaw, Z. The future of wild food plants in southern Ethiopia: Ecosystem conservation coupled with enhancement of the roles of key social groups. *Acta Horticulturae*, v. 806, p. 701–708, 2009.
8. Steyn, N. P.; Olivier, J.; Winter, P.; Burger, S.; Nesamvuni, C. A survey of wild, green leafy vegetables and their potential in combating micronutrient deficiencies in rural populations. *South African Journal of Sciences*, v. 9, p. 276–278, 2001.

9. Flyman, M. V; Afolayan, A. J. The suitability of wild vegetables for alleviating human dietary deficiencies. South African Journal of Botany, v. 72, p. 492–497, 2006.

10. Kiran R. Ranadive\* and Neeta V. Jagtap (2013) Preliminary Checklist of fungal flora of Kaslateritic plateau and surroundings from the North Western Ghats of Maharashtra State, Elixir Appl. Botany 60 (2013) 16637-16640.

11. S. Kolhe (2009) Wild Edible Plants Used By the Tribes of Akole Tahasil of Ahmednagar District (Ms), India, Ethanobotanical leaflet 2009, Page 12

12. Khyade M.S. Kolhe S.R. and Deshmukh B.S. (2009) Wild Edible Plants Used By the Tribes of Akole Tahasil of Ahmednagar District (Ms), India Ethnobotanical Leaflets 13: 1328-36, 2009