Wild Edible Plants Used By the Tribes of Akole Tahasil of Ahmednagar District (Ms), India

Khyade M. S.1*, Kolhe S. R.1 and Deshmukh B.S.2

Post Graduate Department of Botany,
1 S. N.Arts, D.J. M.Commerce and B.N. S. Science College, Sangamner, Dist. Ahmednagar-422 605 (MS), India
2 Arts, Comm. and D. R. Science College Akole, Dist. Ahmednagar- 422601 (MS), India
*Correspondent author, E mail- mskhyade@rediffmail.com

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Abstract

The present communication deals with the ethnobotanical exploration, identification, concerns and future potentialities of the wild edible plant species consumed by the tribal communities inhabiting in the hilly areas of akole tahasil of Ahmednagar district fall in Maharashtra state-India. A total of 31 plant species belonging to 23 families were reported from the study area. Amaranthaceae was the dominant family with 4 taxa, while Papilionaceae followed with 3 taxa. Asclepiadaceae and Bignoniaceae represented by 2 taxa each. The four major life forms were climbers, herbs, shrubs and trees. Herb makes up the highest proportion of the edible species followed by trees, shrubs and climbers. The plant species are divided into two class-vegetables and raw. Also the present finding support further investigation into nutritional profits, pharmacological prospects and conservational studies.

Introduction

Since the time immemorial, useful plants have been handled by human societies for medicinal and food purposes. While, the hunter-gatherer societies still continue to profess such lifestyles. Throughout history, wild edible plants have sustained human populations in each of the inhabited continents. Human consumption of wild plants has been documented from antiquity into the Common Era. Dietary use of wild fruits, nuts, seeds, and leaves appear in numerous records from ancient Egypt [Darby et al. 1977], Greece [Athenaeus, 1927-1942], Rome [Apicus, 1958], India [Caraka, 1981], China [Simoons, 1991] and the Medieval era [Arano, 1976]. Today, most human plant food is based on rather limited number of crops, but it is clear that in many parts of the world the use of wild plants is not negligible [Prescott-Allen and Prescott, 1990; Scherrer et al. 2005; Bussmann et al. 2006; Bussman and Sharon, 2006; Kunwar et al. 2006; Cavender, 2006; Pieroni et al. 2007] Many publications have emphasized on the diversity and value of wild edible plants [Maikhuri et al., 2000; Kala, 2007; Dhyani et al. 2007]. The nutritional value of traditional wild plants is higher than several known common vegetables and fruits [Nordeide et al. 1996; Sundriyal and Sundriyal, 2001; Orech et al. 2007].
The Western Ghats of Maharashtra covers an area of 52,000 km² [Natarajan and Paulsen, 2000]. Ahmednagar district is one of the ten district of Western Ghats region. This district covers an area of 17,035 km² and lies between 73°9' to 75°5' E and 18°2' to 19°9' N. The area under study, hamlets/villages and the market places of Akole tahasil that run parallel to the western coast, called Sahyadris. Forest is of moist deciduous type including some evergreen patches. The tribal population in the tahasil of this district is relatively large. The area is occupied by large numbers of tribe’s viz. Mahadev-koli, Thakars, Bhils and Ramoshies. They speak dialects of the Marathi language. Their major occupation is agriculture. Rice, black sesame and Finger millet are some of the crops they cultivate. The forest resource plays an important role in the livelihood of these communities. Significant work on the field of ethnobotany has been done in past years in the study area [Petkar et al, 2002; Wable and Petkar, 2005; Khyade et al, 2008]. Although much has documented on the ethnomedicinal and floristic aspects of plants of this district, howerever there is not even a single concrete report about the wild edible plant resources of akole Tahasil. Keeping this in view, the present study was conducted as the first ever attempt from the region to explore and identify the wild edible plant resources, to record the indigenous traditional knowledge of utilization.

**Materials and Methods**

*Description of the Study Area and Survey:*

The study area concentrates in and around the forest areas, different villages and market places of Akole tahasil located in Ahmednagar district of Maharashtra state, situated in the Sahyadris ranges of Western Ghats. Several field trips were undertaken around the villages and different market places of Akole tahasil, during 2007 to 2009. At each time of visit, different tribal hamlets and forest pockets were chosen in different seasons to collect more information; also different market places of villages were visited. The information was procured after discussions with several tribal persons, village head, elder women and other local informants.

*Interviews with tribal and village people*

The data were collected according to the methodology suggested by Jain (1995). The ethnobotanical data (local name, mode of preparation) were collected through questionnaire, interviews and discussions among the tribal people in their local language. The questionnaire, such as part of the plant used and detailed about mode of preparation and form of usage. Most of the time, the field visits with the tribals are made to observe and collect the edible plant species. Voucher specimen of each edible plants species were collected during the field visits. The collected species were then dried and preserved following the technique [Jain and Rao, 1967]. The specimens were identified using fresh as well as herbarium materials with taxonomic keys in the Floras like Flora of Bombay Presidency [Cook 1901-1908], Flora of Ahmednagar district [Pradhan and Singh, 1999], Flora of Maharashtra state vol.I [Singh and Karthikeyan 2000], vol. II [Singh et al 2000] and vol. III [Sharma et al 2000], were used to ascertain the nomenclature and deposited at P.G. Department of Botany Sangamner College Sangamner.

**Results and Discussion**

The present investigation comprises 31 species of plants belonging to 23 families. Out of 23 families 5 families were belongs to monocotyledon and remaining 18 families were dicotyledons. In dicot, the dominant families were
Table 1. Wild edible plants used by the tribes of akole tahasil.

<table>
<thead>
<tr>
<th>Botanical name</th>
<th>Family</th>
<th>Local name</th>
<th>Parts used</th>
<th>Preparations (administrations)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Agave Americana</em> L.</td>
<td>Agavaceae</td>
<td>Ghyapat</td>
<td>Flowers</td>
<td>Flowers are cooked as vegetables.</td>
</tr>
<tr>
<td><em>Amaranthus biltum</em> L.</td>
<td>Amaranthaceae</td>
<td>Tandulja</td>
<td>Leaf</td>
<td>Leaves are cooked as vegetables.</td>
</tr>
<tr>
<td><em>Amaranthus spinosus</em> L.</td>
<td>Amaranthaceae</td>
<td>Kate math</td>
<td>Leaf</td>
<td>Leaves are cooked as vegetables along with ingredients.</td>
</tr>
<tr>
<td><em>Amorphophallus paoniifolius</em> (Dennst.) Nicolson.</td>
<td>Amaryllidaeae</td>
<td>Suran</td>
<td>Tuber</td>
<td>Tubers are cooked as vegetables.</td>
</tr>
<tr>
<td><em>Arisaema murrayi</em> (Grah.) Hook.</td>
<td>Araceae</td>
<td>Badada</td>
<td>Tuber</td>
<td>Boiled tubers are eaten also as raw.</td>
</tr>
<tr>
<td><em>Bauhinia racemosa</em> Lamk.</td>
<td>Caesalpinaceae</td>
<td>Shid</td>
<td>Flower, leaf</td>
<td>Flowers and leaves are cooked as vegetables.</td>
</tr>
<tr>
<td><em>Bomax ceiba</em> L.</td>
<td>Bombaceae</td>
<td>Kate-saver</td>
<td>Flower</td>
<td>Flowers are cooked as vegetables.</td>
</tr>
<tr>
<td><em>Cajanus lineatus</em> Wight. &amp; Arn.) Vander.</td>
<td>Fabaceae</td>
<td>Ran-tur</td>
<td>Fruit</td>
<td>Fruits are eaten as raw.</td>
</tr>
<tr>
<td><em>Capparies zeylanica</em> L.</td>
<td>Capparaceae</td>
<td>Waghati</td>
<td>Fruit</td>
<td>Immature fruit is cooked as vegetable.</td>
</tr>
<tr>
<td><em>Caralluma adscendens</em> R.Br.</td>
<td>Asclepidaceae</td>
<td>Makaadsing or Shindamakad</td>
<td>Shoots/Stem</td>
<td>Shoots are cooked as vegetables, also eaten as raw.</td>
</tr>
<tr>
<td><em>Casine glauca</em></td>
<td>Celastraceae</td>
<td>Kanguni</td>
<td>Fruits</td>
<td>Ripe fruits are eaten as raw.</td>
</tr>
<tr>
<td><em>Celotia argentea</em> L.</td>
<td>Amaranthaceae</td>
<td>Kurdu</td>
<td>Leaf</td>
<td>Leaves and twigs are cooked as vegetable.</td>
</tr>
<tr>
<td><em>Chlorophytu tuberosum</em> (Roxb.) Baker.</td>
<td>Liliaceae.</td>
<td>Kuli / Kolu</td>
<td>Leaf,root</td>
<td>Leaves are cooked as vegetable; also roots eaten as a raw.</td>
</tr>
<tr>
<td><em>Colocasia esculenta</em> (L.) Schott.</td>
<td>Araceae</td>
<td>Tera/Alu</td>
<td>Leaf, root</td>
<td>Leaves are cooked as vegetable, also root eaten as raw.</td>
</tr>
<tr>
<td><em>Cordia dichotoma</em> Forst.f.</td>
<td>Boraginaceae</td>
<td>Bhoker</td>
<td>Flower</td>
<td>Flower</td>
</tr>
<tr>
<td><em>Cordia gharaf</em> (Forsk.) Ethrnb. &amp; Asch.</td>
<td>Boraginaceae</td>
<td>Gondani</td>
<td>Fruits</td>
<td>Ripe fruits are eaten as raw.</td>
</tr>
<tr>
<td><em>Digera muricata</em> (L.) Mart.</td>
<td>Amaranthaceae</td>
<td>Kundursa</td>
<td>Leaf, twig</td>
<td>Leaves and twigs are cooked as vegetable.</td>
</tr>
</tbody>
</table>
Dioscorea bulbifera L. | Dioscoreaceae | Kadu-kand | Tuber | Boiled tuber is eaten also fresh eaten as raw.
---|---|---|---|---
Diospyros melanoxylon Roxb. | Ebenaceae | Temburni | Fruit | Ripe fruits are eaten as raw.
Elaeagnus conferata Rosb. | Elaeagnaceae | Ambgul | Fruits | Ripe fruits are eaten as raw.
Ensete superbum (Roxb.) Cheesm. | Musaceae | Bankel/Rankel | Inflorescence | Whole inflorescence is cooked as vegetable.
Flacourtia latitolia Burm.f. | Fabaceae | Tambat | Fruit | Ripe fruits are eaten as raw.
Grevia villosa | Tiliaceae | Kharmate | Fruits | Ripe fruits are eaten as raw.
Launaea procumbens L. | Asteraceae | Pathari | Leaf | Leaves are cooked as vegetable.
Leptadenia reticulate (Retz.) Wight. & Arn. | Asclepiadaceae | Hirandodi | Flower | Flower is cooked as vegetables.
Momordica dioica Roxb.ex.Wild | Cucurbitaceae | Kartoli | Fruit | Fruits are cooked as vegetables.
Moringa oleifera Gaertn. | Moringaceae | Shevga | Flower | Flowers are cooked as vegetables.
Portulaca oleracea L. | Portulacaceae | Mhotighol | Whole plant | Whole plant is cooked as vegetable.
Solanum anguivi Lamk. | Solananeae | Ranvangi | Fruit | Fruits are cooked as vegetable.
Tribulus terrestris L. | Zygophyllaceae | Sarata | Whole plant | Whole plant is cooked as vegetable.
Uraria pcta (Jacq.)Desv,ex.DC. | Papilionaceae | Pithwan | Fruits | Ripe fruits are eaten as raw.

The plant parts used were leaves, fruits, tuber, flower and sometime whole plants for food supplements. Herbs make up the highest preparation of the edible species followed by tree, shrub and climber in descending order. The time and frequency of harvesting various from plant to plant depending upon the availability of edible plant or part which in turn vary from place to place. The edible plant species consumed in many ways, some of them need only washing of the parts or no washing. The parts used were fruits, leaves, flower, tubers and sometimes whole plant. Method of preparation and uses falls into categories like boiled, baking and as raw.

During the survey, it was revealed that the tribals and villagers of Akole have much faith in using the wild plants as a food. The indigenous people of study area are dependent on forests food for their daily live hood. They frequently visit forests to collect their necessary food supplements and other materials. Thus, those people have described the wild food plant based on usage into two classes- vegetables and raw food. The vegetable plant materials are used for cocking, and the raw food is directly eaten after washing.

The leaves of Amaranthus biltum, Amaranthus spinosus, Argyreia nervosa, Bauhinia racemosa, Celotia argentea, Chlorophytum tuberosum, Colocasia esculenta, Digera muricata and Launaea procumbens are mostly used as vegetables for cooking. Moreover species like Arisaema murrayi, Amorphophallus paeoniifolius, Chlorophytum...
*tuberosum* and *Dioscorea bulbifera* bears a tuber which provides hefty minerals and also most of them having medicinal importance. The fruits of *Cajan lineatus, Casine glauca, Capparies zeylanica, Cordia dichotoma, Cordia gharaf, Diospyros melanoxylon, Elaeagnus conferata, Grevia villosa, Flacourtia latitolia,* and *Uraria picta* are generally eaten as raw and sometimes salads and prickles are prepared from them.

Among discussions with tribals and villagers, wild food plants are used as common household food and make a substantial contribution to food security of the tribals and villagers in the study area. Therefore, steps are needed to undertake extensive education about their importance as a nutritional balanced food as a direct and indirect source of income particularly for the resources poor family. These may bring to light one or other new food plants from wild resources for increased population of our country.

**Conclusion**

In the present investigation an attempt has been made to catalogue the local knowledge of wild plants used by tribal and villagers of Akole. Also this study contributes to the database of traditional indigenous knowledge of plants of the country, which have been not been documented earlier. The findings suggest further investigation into nutritional profits, processing methods, cultivation techniques, conservational studies and pharmacological properties of the reported plant species. Many of the wild food may not be freely available in future due to overexploitation, habitat destruction, regular forests fires and invasion of alien exotic species. So efforts must be taken to conserve wild food plants and also the traditional knowledge for a sustainable management of biodiversity.

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**References**


