Traditional knowledge on plants from Toranmal plateau of Maharashtra

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Plant based traditional knowledge has become a recognized tool in the search for new sources of drugs and nutraceuticals. During last few decades various Government agencies, NGOs and pharmaceutical companies have carried out several explorations in search of new drugs. Present communication deals with the traditional knowledge of tribals residing in Toranmal plateau of Maharashtra. The tribals of this region are using plants/plant parts or their suitable preparations for treating various ailments. According to present survey the most prevalent ailments in this region are gastrointestinal disorders, and in treating majority of them underground parts like rhizome, root, tubers, etc. are used. In the present study traditional uses of species of 101 plants were documented. Out of these uses of 25 plants are not cited in the major literature consulted hence, are considered as less known and are enumerated in this paper.

Keywords: Traditional knowledge, Medicinal plants, Toranmal plateau.

Herbal medicine is widely practiced from ancient period throughout the world. These medicines are comparatively safe and environment friendly than synthetic ones. Since last couple of decades intensive work is being carried out on the phytochemistry, pharmacognosy, pharmacology and toxicology of various herbal drugs. Attempts are also made to validate ethnobotanical claims. Some of the recent examples in drug development relate to the species of Commiphora (hypolipidaemic agent), Picrorhiza (hepatoprotective), Bacopa (psychoactive), Curcuma (anti-inflammatory), Asclepias (cardiotonic), Artemisia (anti-malarial) and Trichopus (anti-fatigue), etc.

On one hand drug discovery programmes based on information through traditional knowledge is emphasized and on other hand rapid urbanization, modernization and industrialization are posing threats to the existence of native population and their traditional knowledge. In most parts of the country, forests are being degraded at an alarming rate and monoculture plantation is resulting into the loss of plant diversity, hence there is an urgent need for documentation of traditional knowledge and conservation of plants. Realizing these facts, the authors took up the present task.

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The study area

Toranmal, one of the higher elevation plateaus of Satpuda Mountain is situated in northern part of Maharashtra State. It lies between 21°52’ N latitudes and 74°31’ E longitudes and covers about 41 sq km of forest area. Earlier it was part of Dhule district of Maharashtra. Due to recent division it has become part of Nandurbar district of the State. Forests of this plateau are of tropical dry deciduous type dominated by Tectona grandis L., Terminalia spp. and Acacia catechu (L.f.) Willd.

In this area about 80% population is tribals and the major tribes are Bhil and Naika/Naikda. Other minor tribes are Dhanka, Gomit, Konkana and Pardhi. The language used by them is akin to Marathi. In addition to food they are using several plants for their basic requirements like medicine, fodder, fibre, dye, etc. They collect plant material from nearby forests and also grow some important species in their kitchen and dooryard gardens. Tribals residing in these areas have great faith in the useful and curative properties of the plants. Most of the plants are used in fresh condition for the treatment and some are dried and stored for future use. Living close to the nature they have acquired unique knowledge about the use of flora and have developed pharmacopoeia of their own. Many health hazards like gastrointestinal disorders, jaundice, fever, snake-bite, injuries, etc. are being treated by using these plant materials. Based on this information, brief account on use of some medicinal plants from this area was published by Sharma¹.

Method of survey

For documentation of ethnobotanical information and collection of plant material tours were undertaken during the period 1999-2002. Documentation consisted of interviews with traditional healers (viz. medicinemen, vaid, elder people) based on the method given by Jain², Jain & Mudgal³. Ethnobotanical information was noted on data sheets and in the field books. For collection of plant material, local informer accompanied the authors. The information on medicinal uses reported in present paper is provided by nine medicinemen. Herbarium specimens were deposited at the Herbarium of National Botanical Research Institute (LWG), Lucknow.

Medicinal uses of plants were compared with major published literature like Ambasta⁴, Asolkar et al⁵, Chopra et al⁶, Husain et al⁷, Jain⁸, Jain⁹, Jain¹⁰ and Sharma¹¹, and besides this several research papers were consulted. The uses, which are not mentioned in literature are considered as new or less known in India and are enumerated in present paper.

Enumeration

Medicinals: The plants are arranged alphabetically by botanical name followed by local name, family, uses (part, mode of preparation, doses and method of administration). Finally informer’s name, tribe and his address in Toranmal have been provided in parenthesis.

*Acacia chundra* Willd., ‘Khair’, Mimosaceae

Use: Dysentry; 20-30 ml concentrated bark extract is given twice a day for two
to three days (Pahad Singh/Naik/Modapada).

**Anogeissus latifolia** Bedd., ‘Dhawada’, Combretaceae

Use: Vomiting; 20-30 ml of bark extract given twice at the interval of 6-8 hours depending on condition of patient.

Note: Bark should be taken from bottom to top direction (Chander Singh/Naik/Leghapani).

**Asparagus racemosus** Willd., ‘Aryagavat/Shatavari’, Liliaceae

Use: Pimples; root paste is applied (Chimanramya).

**Atylosia volubilis** Gamble, ‘Walmohida’, Fabaceae

Use: Dysentry and stomach pain; 30-40 ml of bark extract is given twice a day for two days (Ghivanya Bhil/Bhil/Khadakipada).

**Buchanania lanzan** Spr., ‘Charoli’, Anacardiaceae

Use: Itch; seed paste is rubbed over the infected body part (Bindya Tikadya/Naik/Amdaripada).

**Cardiospermum halicacabum** L., ‘Phatakadi’, Sapindaceae

Use: Tonic; seeds are directly eaten as tonic (Pahad Singh/Naik/Modapada).

**Celosia argentea** L., ‘Ukhawada’, Amaranthaceae

Use: Wounds; root paste is applied (Pahad Singh/Naik/Modapada).

**Clerodendrum multiflorum** (L.) Moon., ‘Arnya’, Verbenaceae

Use: Constipation in cattle; leaves are fed to cattle for 3-4 days or 500-600 ml leaf extract is given once a day for few days (Gulab Singh/Naik/Bhavatipada).

**Enicostema axillare** Raynal., ‘Kadunay’, Gentianaceae

Uses: a. Fever; leaf paste is applied over forehead and other body parts to reduce temperature (Chander Singh/Naik/Leghapani).

b. Loose motions and vomiting; 30-40 ml of plant extract is given twice for 2 days (Ghachya Nangry/Bhil/Sitakhaipada).

**Euphorbia geniculata** Orteg. ‘Dudhi’, Euphorbiaceae

Use: To improve lactation in cattle; 80-100 gm crushed plants mixed with maize/wheat flours given to cattle for 15-20 days (Chandar Singh/Naik/Leghapani).

**Hygrophylloa auriculata** (Schum.) Heine ‘Talimkhana’, Acanthaceae

Use: Headache; leaf paste applied over forehead (Chimanramya/Naik/Kundipada).

**Lagenaria siceraria** Standal., ‘Dudhi-bhopla’, Cucurbitaceae

Use: a. Constipation in cattle; green fruits are fed to cattle (Pahad Singh/Naik/Modapada).

b. Veterinary: foot and mouth disease; green fruit slices are rubbed inside mouth twice a day for 8-10 days (Chandar Singh/Naik/Leghapani).

**Ocimum americanum** L., ‘Gandhanya gavat’, Lamiaceae

Uses: a. Veterinary: parasitic flies; leaf rubbed over body of cattle (Gulab Singh/Naik/Bhavatipada).

b. Cuts and wounds; leaf juice is applied (Bindya Tikadya/Naik/Amdaripada).

**Plumbago auriculata** L., ‘Kali chitrak’, Plumbaginaceae

Use: Acidity; root juice 5-10 ml or extract 20-30 ml taken before each meal
for a week (Pahad Singh/Naik/Modapada).

*Terminalia bellirica* (Gaertn.) Roxb., ‘Behada’, Combretaceae

Use: Skin burns; bark paste is applied (Pahad Singh/Naik/Modapada).

*Tinospora cordifolia* (Willd.) Hook. f. & Thoms., ‘Gulvel’ Menispermaceae

Use: Measles; root paste is applied (Somya Rawaji/Naik/Kalapani).

*Zizyphus rugosa* Lamk., ‘Bor’, Rhamnaceae

Use: Loose motions; 20-30 ml bark extract given twice (Chandar Singh/Naik/Laghapani).

Some uncommon edible plants are given in Table 1.

**Discussion**

Use of plants for basic requirements like food, medicine, etc. is probably as old as human itself. Whatever traditional knowledge exits today has its origin in past, which has been passed through one generation to other by verbal means.

Present ethnobotanical explorations conducted in forest areas of Toranmal plateau, resulted in the information about traditional plant uses of 101 plant species belonging to 89 genera and 47 families. Of these 74 plants are medicinal, 44 edibles and 11 used for other purposes. Medicinal uses of 28 species in this region are also known in Ayurvedic practices, which indicates authenticity of the traditional practices. The paper enumerates 20 medicinal uses which are not cited in the major medicinal and ethnobotanical literature in India and seven uncommon edible plants.

Among medicinal plants majority of species are from families Fabaceae and Euphorbiaceae. Most prevalent ailments/diseases in these areas are gastrointestinal disorders; this may be due to poor sanitary conditions and/or contaminated potable water. The medicinal preparations are used in various forms, viz. plant sap, powder, extract, decoction, paste, juice based on experience of the tribals for individual plant. Use of plant species for veterinary ailments shows their consciousness about the health of livestock.

<table>
<thead>
<tr>
<th>Plant Name &amp; Family</th>
<th>Local Name</th>
<th>Part/s Used</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Argemone mixicana</em> L.</td>
<td>Ghokra</td>
<td>stem as vegetable</td>
</tr>
<tr>
<td><em>Papaveraceae</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Butea monosperma</em> (Lamk.) Taub. Fabaceae</td>
<td>Palas</td>
<td>flowers, pod as vegetable</td>
</tr>
<tr>
<td><em>Clerodendrum serratum</em> (L.) Moon Fabaceae</td>
<td>Karai</td>
<td>young leaves as vegetable</td>
</tr>
<tr>
<td><em>Desmodium ooejensis</em> (Roxb.) Hochr. Fabaceae</td>
<td>Tiwas</td>
<td>flowers as vegetable</td>
</tr>
<tr>
<td><em>Rivea hypocrateriformis</em> Choisy Convolvulaceae</td>
<td>Phange</td>
<td>leaves as vegetable</td>
</tr>
<tr>
<td><em>Garuga pinnata</em> Roxb. Burseraceae</td>
<td>Kakad</td>
<td>fruits eaten and used for pickle</td>
</tr>
<tr>
<td><em>Grewia tiliaefolia</em> Vahl Tiliaceae</td>
<td>Dhaman</td>
<td>Fruits edible</td>
</tr>
</tbody>
</table>

Table 1—Some uncommon edible plants of Toranmal plateau
Sometimes medicinemen recommend direct chewing or eating of plant part e.g. roots of Baliospermum montanum are eaten directly for treating acute condition like constipation. The majority of the medicines are prepared as paste and applied externally or internally depending on condition and requirement of the patient. Majority of preparations are from underground parts (like root, rhizome, tuber, etc.). Since most of the herbs and climbers are ephemeral, it shows tendency of tribes towards conservation.

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References