Traditional uses of ethnomedicinal plants of lower foot-hills of Himachal Pradesh-I

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The paper documents the traditional knowledge of medicinal plants that are used by the indigenous villagers residing in remote foot-hill areas of Himachal Pradesh in household remedies. An ethnobotanical survey was conducted on lower foot-hills of Himachal Pradesh during 2007-08. About ten different ethnobotanical plant species were recorded for their medicinal uses and for other remedial purposes by the local inhabitants. There were seven families of which Asteraceae and Amaranthaceae families were mostly exploited by the people. *Abrus precatorius* is found vulnerable in Hamirpur district due to its excessive exploitation for various purposes by the local contractors. *Crotolaria juncea* is not only used as medicinal plant but it is also used as green manure in the fields. During survey, it is also found that some plant species such as *Abrus precatorius*, *Eclipta alba*, *Deeringia amaranthoides* and *Physalis minima* require in situ as well as ex situ conservation in the area for maintaining future germplasm source.

Keywords: Traditional uses, Ethnomedicinal plants, Lower foot-hills, Himachal Pradesh

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Beneficial and medicinal properties of plants have been used in some forms or the other by the primitive people and cures were effective without any harmful consequences. Formulations of these medicinal plants were based totally on the local flora present in their vicinity but due to many intervening factors, only few of the records survive today. Tribal people live in harmony with the nature and maintain a close link with environment. Indian subcontinent is being inhabited by over 53.8 million tribal people in 5,000 forest dominated villages of tribal community and comprising 15% of the total geographical area of Indian landmasses, representing one of the greatest emporia of ethno-botanical wealth. Himachal Pradesh is such one of hilly state area of North West India that comprises a good heritage of ethnobotanical flora and natural wealth. Nestled in the western Himalayas, Himachal Pradesh is a hilly state situated in the Northwest Himalayan region between 30°22′ 44″ N to 33° 12′ 44″ N latitude and 75°45′ 44″ E to 79° 04′ 20″ E longitude, extends over an area of about 55,673 sq km in Northwestern part of India. Plant species represent a huge biodiversity of form, habitat, function and phytochemicals. Out of around 3,500 species of higher plants identified in Himachal Pradesh, there are about 1,500 species of medicinal and aromatic plants. Ethnobotanical studies on some plants of district Hamirpur and wild plants of lower hills of Himachal Pradesh are invetigated (Fig. 1). Although, ethnobotanical studies on plants of Himachal Pradesh

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has been done on some parts of the state but in the survey, an attempt was made to explore some of useful information on medicinal plants growing in wild and their medicaments in local household remedies by villagers. Secondly, the aim of the investigation is to record new or lesser-known medicinal uses of plants from the local people/villagers and to know the laws and ways of nature for making optimum sustainable use of plant resources.

**Methodology**

During the field survey, ethnomedicinal plants were collected from foot-hill villages of six districts i.e. Hamirpur, Mandi, Kangra, Una, Solan and Bilaspur. These plants were preserved as herbarium specimens in Botany Department, Kurukshetra University, Kurukshetra. Local inhabitants were interviewed about medicinal uses of plants. The standard method of ethnobotanical studies were followed. Two broad approaches of ethnobotanical studies were taken under considerations. In direct approach, the extensive and intensive fieldwork in the rustic villages was done. This is usually carried out by direct contacts with villagers and first hand information was collected from all the study sites. In Indirect approach, information was obtained in different ways i.e. through ancient literature, personal diaries of foresters, traditional local doctors/hermits, plant collectors etc. In the present investigation, both direct and indirect approaches were employed to get the proper understanding of ethnomedicinal uses of plants. Information about the plants were recorded with regards to their vernacular names, plant part used, process of preparation of medicine either individually or in combination with other plant parts, and mode of application and doses for the treatment. The collected information was analyzed for different genera and species of the medicinal plants in order to understand the pattern in medicinal plant uses and occurrences.

<table>
<thead>
<tr>
<th>Plant name/ Local name</th>
<th>Family</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrus precatorius Linn.</td>
<td>Fabaceae</td>
<td>Root paste is applied on skin infections. In some places, it is considered as a poisonous plant and is kept away from households. Used for treating abortion and leucoderma; seed powder is used for killing pests in some local areas.</td>
</tr>
<tr>
<td>Aerva koenigii (Linn.) Juss. Kangnis</td>
<td>Amaranthaceae</td>
<td>Flowers with seeds are eaten raw to relieve bleeding piles. Leaves are used for curing liver disorders in the form of Sag as household vegetable preparation.</td>
</tr>
<tr>
<td>Crotolaria juncea Linn.</td>
<td>Fabaceae</td>
<td>In Mandi district, whole plant decoction is consumed for stomach pain by the local villagers. In Hamirpur and Bilaspur districts, the herb is given to cattle to increase milk yield. Some villagers use this plant as green manure for soil.</td>
</tr>
<tr>
<td>Deeringia amaranthoides (Lamk.) Merr. Piringya</td>
<td>Amaranthaceae</td>
<td>Leaves are cooked with salt to treat liver disorders like Pit by some villagers. Dye from fruits and seeds is prepared for colouring the clothes and attires in some areas of Mandi district.</td>
</tr>
<tr>
<td>Dodonaea viscosa Linn. Mehndru</td>
<td>Sapindaceae</td>
<td>Leaves are boiled in water and leaf pulp is applied on joint dislocations and swellings. Leaves and flowers are good repellent of mosquitoes. Wood is very hard and is used in making combs and handles of sickle, hoes and spades.</td>
</tr>
<tr>
<td>Eclipta alba (Linn.) Hassk. Bringraj</td>
<td>Asteraceae</td>
<td>Leaf decoction is put on head to cure headache. Leaf extract is also given to cure asthma, cold; also applied for hair clearing and lice by villagers.</td>
</tr>
<tr>
<td>Inula royleana Hook DC. Manerpatar</td>
<td>Asteraceae</td>
<td>The roots are stored for its aroma and used for protection of garments. Root extract is used to cure dermatitis and allergy. Root paste is also applied with leaf on swelling sprains and as an antiseptic by villagers in Kangra district.</td>
</tr>
<tr>
<td>Physalis minima Linn. Patakiri or Rashbari</td>
<td>Solanaceae</td>
<td>Fruits and flowers are cooked by some villagers of Hamirpur district and given in stomach pain and constipation. In Solan district, herb paste is applied in ear disorders.</td>
</tr>
<tr>
<td>Roylea cinerea Linn. Kodu</td>
<td>Labiatae</td>
<td>Shoots are crushed and eaten with salt to strengthen the liver by local villagers. Young shoots are used as insect repellent for cattle during rainy season. Leaves and shoot extraction is used in scabs and other skin infections. Some people use flowers in snuffing purposes during cold season in Himachal Pradesh.</td>
</tr>
<tr>
<td>Sida rhombifolia Linn. Bal</td>
<td>Malvaceae</td>
<td>Whole plant infusion is applied on bleeding piles. Local villagers eat fruits during cold to get relief from cough.</td>
</tr>
</tbody>
</table>
Results and discussion

Due to unscientific and over exploitation, these plants have become merely extinct and endangered. Hence, there is a need for in situ and ex situ conservation of these ethnobotanical/ medicinal and aromatic plant resources. Little attention has been paid to the genetic, molecular and biochemical characterization of the existing biodiversity of medicinal plants. At the same time the Department of Biotechnology, Government of Himachal Pradesh has selected some market oriented medicinal plants for commercial cultivation organically in different parts of the state which would entail huge quantities of their seed quality or planting material. During survey, it was reported that the fruits and seeds of *Deeringia amaranthoides* are collected and dye is prepared for colouring the clothes and attires in some areas of Mandi district. *Crotolaria juncea* is not only used as medicinal plant by the people but it is also used as green manure in the fields. Some plant species such as *Abras precatorius*, *Eclipta alba*, *Deeringia amaranthoides* and *Physalis minima* are useful plants of lower hills of Himachal Pradesh (Table 1). In spite of the rich wealth of bioresources, development is far from meeting the expectations of local people mainly in terms of existing healthcare facilities and herbal industries that will generate employment and vis-à-vis development of the state. The information generated from the study regarding the medicinal plant use by the villagers need a thorough phytochemical investigation including alkaloid extraction and isolation along with few clinical trials. This could help in creating mass awareness regarding their conservation, promotion of ethno-medico-botany knowledge within the region besides contributing to the preservation and enrichment of the gene bank of such economically important species before they are lost irrevocably.

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References