SURVEY OF ETHNOMEDICINAL PLANTS USED BY MIGRATORY SHEPHERDS IN SHIMLA DISTRICT OF HIMACHAL PRADESH

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Abstract

In Himachal Pradesh tribal migratory shepherds have rich traditional knowledge about ethnomedicinal plants and its uses, in this respect, an ethnobotanical survey was carried out in district Shimla of Himachal Pradesh from 2017 to 2018. The required information on ethnomedicines used by tribal migratory shepherds was collected through personal field visits, interview method and by using a pretested questionnaire. It was observed that in all 32 medicinal plant species were reported viz. 

- Bergenia ciliata
- Berberis lyceum
- Cannabis sativa
- Dioscorea deltoidea
- Rhododendron arboretum
- Solanum nigrum
- Zanthoxylum armatum
- Picrorhiza kurroa

was recorded that herb species were markedly high (13) followed by shrub (9), tree (8), climber (1), and fern (1). This study shows that shepherds in tribal areas are highly dependent on ethnobotanical medicines, which evolved over generations of experience, for the healthcare. This survey can help as baseline data on ethnomedicinal plants used in Shimla district and could be helpful in conservation of traditional knowledge as well as medicinal plants.

Key words: Ethnomedicines, Shepherds, Shimla district.

Introduction

India is rich in its cultural assortment of different native beliefs. In India, it has been reported that about 90-95% collection of medicinal plants is collected from the wild area (Adhikari et al., 2010). The Indian Himalayan region (IHR) is described by its unique natural beauty, with a wide range of habitat and climatic conditions. The varied culture of India is a rich source of traditional knowledge. Since long time traditional knowledge of ethnomedicines are used by our ancestors for their well-being and transferred orally to next generation (Sharma and Rana, 2016). Moreover, Himachal Pradesh has led to tribal ways of life, adherence to the primitive customs and traditions representing on enormous and difficult terrain of scattered human settlement (Chowdhery, 1999). Majority of the rural societies depend on this traditional knowledge for a variety of reasons related to the healthcare, social order, economy, shelter and food etc. Attention in herbal medicines has increased considerably as they are believed to be comparatively less toxic than the synthetic drugs and easily available from surroundings without any cost. Due to over exploitation of medicinal plants if efforts are not made with instant effect, the huge traditional knowledge possessed by tribal peoples will diminish almost immediately. This calls for an urgent need to document ethnobotanical information. Ethnobotanical work in different parts of Himachal Pradesh had been conducted by many workers (Dutt et al., 2014). In particular, the state of Himachal Pradesh is a home to sizeable tribal communities like the Bhotias, Kinnaurs, Gaddis Pangwals and Gujar’s. Migratory shepherds of Himachal Pradesh move with their livestock in search of grazing pastures throughout the year, leaving for low hills with the commencement of winter season and returning to their villages at high altitude in summer season. The tribal migratory shepherds move in a groups of their own family members. The migratory shepherds include both sheep and goats and size of the flock is mixed. The migratory shepherds also take along with them few horses for carrying eatables and shelters. Often 4-5 dogs also accompany the migratory shepherds and, these dogs are very well trained in protecting their livestock from wild animal attacks. There is at all times insufficiency of food, water, fodder for livestock and themselves. Such problems have also been reported in many earlier survey (Biswas and Rao, 2016). Therefore, the present study is an attempt to document the ethnomedicines used by tribal migratory shepherds in district Shimla of Himachal Pradesh. There is no correct record available regarding the ethnomedicines used by tribal migratory shepherds in Shimla district of Himachal Pradesh. The ethnobotanical information on medicinal plants of this area is expected to provide new dimension’s forever expanding pharmaceutical industry and this study will also helpful to the common man, teachers, scholars, industry and finally science.
Materials and Methods

Study Area

The present study is carried out in Shimla district of Himachal Pradesh (Fig. 1), located in the lap of the Himalayas, has different climatic conditions due to variations in altitudes ranging from 450 meters to 6500 meters asml from west to east and from south to north. The wide differences in topography, altitude, latitude and climatic conditions have made Himachal Pradesh a home for wide variety of flora and fauna. The Shimla district, situated at 31.61°N 77.10°E, lie in the south-western ranges of the Himalayas; have a rich storehouse of different plant species. Most of these plant species find their use in traditional medicine, folk uses and also in modern industry (Singh and Thakur, 2014). In Shimla district medicinal plants used by migratory shepherds were observed. Surroundings of Shimla district is abounding with beautiful vegetation, offering ample opportunities to biologists, scholars, common man, and researchers.

Ethanobotanical Data

The important biodiversity of medicinal plants of Shimla district was surveyed. For this survey, extensive field trips of the entire area of Shimla district was undertaken between 2017 to 2018. The information on wild medicinal plants used by migratory shepherds in Shimla district was collected by interviews, pretested questionnaire, participatory observation and through discussion method (Fig. 2). Only those medicinal plants were collected, which were most frequently used by the migratory shepherds for the treatment of various ailments. The specimens of medicinal plants being used by migratory shepherds were collected, dried and mounted on herbarium sheets, with label information describing when and where they were collected. Vouchers of plant specimens were places in the herbarium of the Shoolini University, Solan (Himachal Pradesh). Plants were identified either in the field itself through literature study or with the help of experts from Botanical Survey of India Dehradun (Uttarakhand) (Jain, 1991).

Results and Discussion

The present study is carried out in Shimla district of Himachal Pradesh concerning the ethnomedicines used by migratory shepherds in their own traditional health care system. A total of 32 ethnomedicinal plants were documented in Shimla hills. It was recorded that herb species were markedly high (13) followed by shrub (9), tree (8), climber (1), and fern (1) (Table 1). Among these medicinal plant species, the maximum medicinal plants were used for cough, cold, skin infection, and wound healing etc. Plants used by shepherds were tabulated in alphabetical order of botanical name, family, Hindi name, flowering and fruiting months, habit, voucher no, parts used and ethnomedicinal uses. The fast acceleration of market pressure for medicinal plants, and recent disputes related to benefit sharing, the proper documentation of traditional knowledge is of vital priority (Singh and Batish, 2015; Yadav et al., 2014). The continuation of traditional knowledge is risking as the transmission between the younger and older generations no longer exists (Kapoor, 2017). Therefore, proper documentation of the traditional information through ethnombotanical studies is significant for the utilization of biological resources and their conservation (Bagga et al., 2018). Difficult environmental conditions cause seasonal migration of shepherds from high hills to low hills in different parts of Himachal Pradesh. In the tribes of Himalayan region seasonal migration is a traditional process. It was notable that migration patterns of shepherds closely mirror the seasonal availability of natural fodder (Rao et al., 2011).

Unluckily, over exploitation of medicinal plants and the changing environmental conditions have made accessibility of medicinal plants as a scarce resource to the migratory shepherds during their seasonal migration. It is also highlighted that satisfactory attention has not been put in promoting and conserving traditional used wild medicinal plants. There is an urgent need to adopt large scale plantation of these medicinal plant species within the forests as well as along roadsides so that the tribal shepherds are profited. The current study shows that Shimla district is rich in medicinal plants and shepherds are enriched with folk traditional knowledge about these medicinal plants. It can be concluded that documentation of this traditional knowledge is novel information from the area of Shimla district, in Himachal Pradesh. The traditional knowledge, plant biodiversity, and cultural practices of the tribal people are facing high threat due to fast urbanization in these study areas.

Conclusion

This study can serve as baseline information on traditional used medicinal plants and it could be helpful to further reinforce the conservation of medicinal plant resources. Ethnobotanical studies have a main role to play in new drug development. The information on therapeutic uses of plants may provide a great potential for discovering new drugs and promoting alertness among the societies to use them as remedy in health care with supreme knowledge and accuracy.
Figure 1: Map of study site.

LOCATION OF SHIMLA DISTRICT

Figure 2: Interaction with migratory shepherds in Shimla district of Himachal Pradesh.
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Botanical Name</th>
<th>Family</th>
<th>Common Name</th>
<th>Flowering &amp; Fruiting</th>
<th>Parts used</th>
<th>Habit</th>
<th>Voucher specimen number</th>
<th>Ailments treated</th>
<th>Ethnobotanical Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Abies spectabilis (D.Don) Spach</td>
<td>Pinaceae</td>
<td>Kolroi</td>
<td>April-May, Cones ripen during September-October</td>
<td>Leaves</td>
<td>Tree</td>
<td>SUBMS/BOT-1201</td>
<td>Asthma, Fever</td>
<td>Juice of leaves is used.</td>
</tr>
<tr>
<td>2</td>
<td>Asparagus falcatus D.Don</td>
<td>Asparagaceae</td>
<td>Chiriyakanda</td>
<td>May-July</td>
<td>Roots</td>
<td>Fern</td>
<td>SUBMS/BOT-1202</td>
<td>Dysentery, Diarrhea, Throat complaints</td>
<td>Juice of roots is used.</td>
</tr>
<tr>
<td>3</td>
<td>Adhatoda vasica Nees</td>
<td>Acanthaceae</td>
<td>Arusa</td>
<td>December-June</td>
<td>Leaves</td>
<td>Herb</td>
<td>SUBMS/BOT-1203</td>
<td>Cough, Cold</td>
<td>Juice of leaves is used.</td>
</tr>
<tr>
<td>4</td>
<td>Achillea millefolium L.</td>
<td>Asteraceae</td>
<td>Bhutkesi</td>
<td>June-December</td>
<td>Whole part</td>
<td>Herb</td>
<td>SUBMS/BOT-1204</td>
<td>High Body pain, Respiratory infection</td>
<td>Whole plant is used.</td>
</tr>
<tr>
<td>5</td>
<td>Berberis lycoyium Royle</td>
<td>Berberidaceae</td>
<td>Karmashal</td>
<td>March-July</td>
<td>Fruits, Roots</td>
<td>Shrub</td>
<td>SUBMS/BOT-1205</td>
<td>Nutritious for health, Jaundice</td>
<td>Fruits are edible and highly nutritious. Roots decoction is given in jaundice.</td>
</tr>
<tr>
<td>6</td>
<td>Bauhinia veriegata (L.) Bent</td>
<td>Fabaceae</td>
<td>Kachnar</td>
<td>April-November</td>
<td>Leaves, Bark</td>
<td>Tree</td>
<td>SUBMS/BOT-1206</td>
<td>Skin infection</td>
<td>Juice of dried leaves and Bark is used.</td>
</tr>
<tr>
<td>7</td>
<td>Bergenia ciliata (Haw.) Sternb</td>
<td>Saxifragaceae</td>
<td>Pashanbhed</td>
<td>June-August</td>
<td>Rhizomes, Leaves, Flowers</td>
<td>Herb</td>
<td>SUBMS/BOT-1207</td>
<td>Joint pains, Fever</td>
<td>Decoction of rhizome prescribed to cure cold and joint pains. Leaves and flowers used for fever.</td>
</tr>
<tr>
<td>8</td>
<td>Betula utilis D. Don</td>
<td>Betulaceae</td>
<td>Bhojpatra</td>
<td>May-October</td>
<td>Seeds</td>
<td>Tree</td>
<td>SUBMS/BOT-1208</td>
<td>Bone fracture</td>
<td>Seeds mixed with Cannabis sativa and paste prepared and used on fractured part then covered with the bark of Betula utilis</td>
</tr>
<tr>
<td>9</td>
<td>Celtis tetrandra Roxb.</td>
<td>Ulmaceae</td>
<td>Khirk</td>
<td>February-April</td>
<td>Seeds</td>
<td>Tree</td>
<td>SUBMS/BOT-1209</td>
<td>Indigestion</td>
<td>The juice from the seeds is used.</td>
</tr>
<tr>
<td>10</td>
<td>Cannabis sativa L.</td>
<td>Cannabaceae</td>
<td>Bhang</td>
<td>June-September</td>
<td>Leaves</td>
<td>Herb</td>
<td>SUBMS/BOT-1210</td>
<td>Abdominal pain</td>
<td>Leaves of Cannabis sativa burn over flame and smoke is used for abdominal pain.</td>
</tr>
<tr>
<td>11</td>
<td>Dioscorea deltoides Wall.</td>
<td>Dioscoreaceae</td>
<td>Singlimghi</td>
<td>July-October</td>
<td>Tubers, Leaves</td>
<td>Climber</td>
<td>SUBMS/BOT-1211</td>
<td>Skin allergy, Burns, Wound healing</td>
<td>Juice of tubers and leaves is used.</td>
</tr>
<tr>
<td>12</td>
<td>Eupatorium adenophora (Spreng.) King &amp; H. Rob</td>
<td>Asteraceae</td>
<td>Pamakani</td>
<td>March-April</td>
<td>Leaves</td>
<td>Shrub</td>
<td>SUBMS/BOT-1212</td>
<td>Skin cuts</td>
<td>Juice of leaves is applied.</td>
</tr>
<tr>
<td>13</td>
<td>Ficus religiosa L.</td>
<td>Moraceae</td>
<td>Peepal</td>
<td>November-February</td>
<td>Leaves, Bark</td>
<td>Tree</td>
<td>SUBMS/BOT-1213</td>
<td>Skin infection</td>
<td>Powder of dried bark and leaves is used.</td>
</tr>
<tr>
<td>14</td>
<td>Jjulans regia L.</td>
<td>Juglandaceae</td>
<td>Akhrot</td>
<td>April-October</td>
<td>Bark, Leaves, Fruits</td>
<td>Tree</td>
<td>SUBMS/BOT-1214</td>
<td>Diarrhea</td>
<td>Bark, leaves and fruits are used.</td>
</tr>
<tr>
<td>15</td>
<td>Hippophae salicifolia D. Don</td>
<td>Elaeagnaceae</td>
<td>Chuk</td>
<td>June-July</td>
<td>Bark, Fruits</td>
<td>Shrub</td>
<td>SUBMS/BOT-1215</td>
<td>Sun burn</td>
<td>Juice of bark and fruits is applied.</td>
</tr>
<tr>
<td>16</td>
<td>Lycystena formosa Wall.</td>
<td>Caprifoliaceae</td>
<td>Piralu</td>
<td>June-November</td>
<td>Roots</td>
<td>Shrub</td>
<td>SUBMS/BOT-1216</td>
<td>Skin infections</td>
<td>The juice of roots is used.</td>
</tr>
<tr>
<td>17</td>
<td>Picrocriza kurroo Royle ex Benth</td>
<td>Scrophulariaceae</td>
<td>Karru</td>
<td>June-August</td>
<td>Leaves, Rhizomes</td>
<td>Herb</td>
<td>SUBMS/BOT-1217</td>
<td>Asthma, Jaundice, Cough</td>
<td>Juice of dried leaves and rhizomes is used.</td>
</tr>
<tr>
<td>18</td>
<td>Prunus ceratoide D.Don</td>
<td>Rosaceae</td>
<td>Pajja</td>
<td>December-March</td>
<td>Fruits</td>
<td>Tree</td>
<td>SUBMS/BOT-1218</td>
<td>Nutritious for health</td>
<td>Fruits is used.</td>
</tr>
<tr>
<td>19</td>
<td>Phytolacca acuminosa Roxb</td>
<td>Phytolaccaceae</td>
<td>Jharka</td>
<td>July-September</td>
<td>Leaves, Twigs</td>
<td>Herb</td>
<td>SUBMS/BOT-1219</td>
<td>Nutritious for health</td>
<td>Tender leaves and twigs are cooked as vegetable.</td>
</tr>
<tr>
<td>20</td>
<td>Rames hastatus D. Don</td>
<td>Polygonaceae</td>
<td>Churki</td>
<td>June-August</td>
<td>Roots, Shoots</td>
<td>Herb</td>
<td>SUBMS/BOT-1220</td>
<td>Indigestion</td>
<td>Juice of shoots and roots is used.</td>
</tr>
</tbody>
</table>
21 Rhododendron arboreum Sm. | Ericaceae | Burans | March-September | Flowers | Tree | SUBMS/BOT-1221 | Fever, Cough | Juice of dried flowers is used.
22 Rhus parviflora Roxb | Anacardiaceae | Samakdana | July-August | Bark | Shrub | SUBMS/BOT-1222 | Headache | The paste prepared from the dried Bark is used.
23 Rubus ellipticus Sm. | Rosaceae | Anehu, Hinsalu, Aakhe | February and April | Fruits | Shrub | SUBMS/BOT-1223 | Cough, Fever | Juice of fruits is used.
24 Selinum vaginatum C.B. Clarke | Apiaceae | Bhtkeshi | July-September | Leaves | Herb | SUBMS/BOT-1224 | Skin infection | Juice of leaves is used.
25 Trillium govanianum (D.Don.) Kunth | Trilliaceae | Nagchatri | May-June | Leaves, Roots | Herb | SUBMS/BOT-1225 | Headache, Fever | Juice of leaves and roots is used.
26 Thymus serphyllum L. | Lamiaceae | Banajwain | April-September | Leaves, Seeds | Shrub | SUBMS/BOT-1226 | Fever, Stomach problems, Cold | Leaves and seeds are considered a popular remedy
27 Urtica dioica L. | Urticaceae | Bhichu Booti | June-October | Leaves, Roots, Shoots | Herb | SUBMS/BOT-1227 | Nutritious for health, Wounds | Juice of leaves and roots are used. Tender leaves and shoots cooked as vegetable.
28 Urtica parviflora Roxb | Urticaceae | Kandali | June-October | Leaves, shoots | Herb | SUBMS/BOT-1228 | Sprain of foot | Juice of leaves and shoots are applied.
29 Verbascum thapsus L. | Scrophulariaceae | Tamaku | June-August | Roots | Herb | SUBMS/BOT-1229 | Vomiting | Juice of roots is taken orally.
30 Valeriana jatamansi Jones | Caprifoliaceae | Muskbala | March-April | Leaves, Roots | Herb | SUBMS/BOT-1230 | Wounds, Headache | Juice of dried leaves and roots mashed in water is applied on forehead to relieve the pain. The juice of dried roots is applied on wounds for healing.
31 Vitex negundo L. | Verbenaceae | Nirgandi | March-September | Leaves | Shrub | SUBMS/BOT-1231 | Joint pains | Leaf paste applied to heal swollen joint pains.
32 Zanthoxylum armatum DC. | Rutaceae | Tirmir | April-June | Bark, Seeds, Fruits | Shrub | SUBMS/BOT-1232 | Tooth pain | Juice of bark and seeds and fruits are used.

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References

