Ethnomedicinal uses of certain locally available plants of Bandipora district of Jammu & Kashmir, India

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Abstract: Throughout the globe, the traditional knowledge system has gained prime importance in context with conservation, sustainable development and search for new utilization patterns of plant resources. In the present work an attempt has been made to study the traditional knowledge of certain locally available plants being used for medicinal purposes in district Bandipora of Jammu and Kashmir. The district has a rich flora of medicinal plants with diverse biological properties. The people of the region have always used the medicinal plants for curing various human and livestock ailments and are still dependent on them for food, shelter, health, medicines, fodder and various cultural purposes. Ethnomedicinal data was collected by means of questionnaire method, interviews and discussions with local knowledgeable persons, herbal healers called “Bhoris”, tribes (Gujjars and Bakkerwals) and by direct observation during field trips. As a result of this study, conducted during March 2011 to September 2011, a total of 42 plant species belonging to 28 different families were found to be used as effective remedies by the local people to cure various ailments afflicting humans as well as their domestic animals. Today, many medicinal plants are on the verge extinction not only because of certain natural factors but also due to a wide range of anthropogenic factors. However, the efforts like present study must be promoted more and more so as to serve as a source for sustainable utilization as well as conservation of fast eroding plants of the region.

Keywords: Ethnomedicine; traditional knowledge; Tribals; Bandipora.

Introduction

Indigenous knowledge is as old as human civilization. The tribal people and the ethnic races throughout the world have developed their own customs, religious rites, folklore and songs. Numerous wild and cultivated plants play a very important and vital role among these cultures and this relationship has evolved over generations of experience and practice. The ancient Indians were acquainted with large number of plants than the natives of any other country. This is evident from the ancient Indian treatises such as Materia Medica, Nighantus and Koshas. According to Ayurvedic Materia Medica there is no plant on earth which does not have medicinal value. Plants have been used in traditional medicine for thousands of years (Abu-Rabia 2005). About 80% population of the world depends upon the traditional system of healthcare (Ahmad 1999). These medicines have fewer side effects and are easily available.

Plant based traditional knowledge has become a recognized tool in search for new source of drugs and pharmaceuticals. The traditional use of plants has declined due to scarcity of species, which is caused by human activities and overgrazing by animals. Tribal populations have good knowledge about the use of medicinal plants. They believe that all afflictions are caused by supernatural forces. The way they diagnose the diseases are very interesting because they live in far-flung and remote areas and lack the use of modern scientific equipments for treatment. They however, treat diseases by using medicinal plants (Santhya et al. 2006).

According to data released by the World Health Organization (WHO, 2003), ethnomedicine has maintained its popularity in all regions of the developing world and its use is rapidly expanding in the industrialized countries. For instance, in China traditional herbal preparation account for 30-50% of the total medicinal con-
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sumption. In Ghana, Nigeria and Zambia, the first line treatment for 60% of the children with malaria is the use of herbal medicine.

Ethnobotanical surveys have been found to be one of the reliable approaches to drug discovery (Fabricant and Farnsworth 2001). The absence or inaccessibility of modern health care services, affordability, cultural acceptance and under certain circumstances their effectiveness in comparison to their modern counterparts have caused a large percentage of the population to rely mostly on plant based traditional medicine for their primary healthcare needs. These factors and a growing interest in the use of natural products and folk medicine have led to an increase in the demand for medicinal plants (Simbo 2010).

The state of Jammu and Kashmir, cradled in the lap of Himalayas has been recognized as heaven on earth and is also called the “Biomass” state of India. This area which is located in the far-north of the Indian Republic has a diverse variety of plant species especially ethnomedicinally important plants due to wide variations in its topography and microclimatic conditions. Many studies have been carried out to document the ethnomedicinal information from different areas of the region (Sharma and Kachroo 1983; Sharma and Jamwal 1988; Battacharyya 1989; Ara and Naqshi 1992; Kaul et al. 1994; Kapur 1995; Singh 1995; Sharma 2002; Lone 2003; Lone et al. 2013). Bandipora district is one of the 22 districts in Jammu and Kashmir that was carved out from the erstwhile Baramulla district on 01-04-2007. It falls in north Kashmir and lies 34° 64’ N latitude and 74° 96’ E longitude. Most of area of the District is hilly terrain and is bounded in the west by district Kupwara, in the South-east by district Ganderbal and in the east by district Kargil, Baramulla in the south and on north side it is bounded by LOC (Line of Control). It is divided into three tehsils namely Bandipora, Gureiz and Sonawari (Figure 1).

The district is topographically very rich in forest and ground vegetation including the medicinally important plants. Least documented information (Ara and Naqshi 1992; Kapahi et al. 1993; Dad and Khan 2011) about the ethnomedicinal knowledge of this floristically rich area of the Himalayan region is available but this information is particularly confined to the Gurez tehsil of the study area only. Therefore in the present study an attempt has also been made to document the ethnomedicinal uses of the certain locally available plants from the rest two tehsils viz. Bandipora and Sonawari tehsils besides Gurez tehsil of Bandipora district of Jammu and Kashmir, India. The study of this type will also contribute to the efforts that have been already initiated for the documentation of ethnobotanical knowledge from all parts of Kashmir.

Material and methods

During investigation, extensive field surveys and plant collections were made from various regions of the study area from March 2011 to September 2011. Interviews and discussions with local knowledgeable persons, herbal healers called “Bhoris” and Tribals, were held to document the traditional knowledge about plants. Preference for ethnomedicinal exploration was given to those places that were rich floristically as well as had sizable population of tribals (Gujjars). Besides, Bakkerwals (tribal residents of Rajouri and Poonch districts of Jammu and Kashmir) were also consulted. In total 87 informants were consulted who were between the ages of 37-98 years. A semi-structured and close-ended questionnaire (Qureshi et al. 2009) was used to gather the information about ethnomedicinal uses of plants from local people especially those residing in hilly remote areas. Kashmiri language that was understandable in most of the cases was used for asking questions to the informants. However, Urdu language (official language of J&K) was also used in tribal areas. In order to provide independent information, informants were separately asked to share their traditional knowledge on the utilization of medicinal plants such as the local name, plant part used, ailment in which plant part used and mode of administration. Data was collected according to an appropriate methodology (Jain 1967, 1995; Khan 1993) and recorded in the field note book. To ensure an element of accuracy, the information that was gathered from informants of different areas was cross checked. From the natural habitats, plants
were collected in their flowering and fruiting stages as far as possible. Field photographs of the plants were taken for easy identification and habitat recognition. Collected plants were dried, pressed, preserved (poisoned) and finally mounted on herbarium sheets following standard herbarium technique as described by Miller and Nyberg (1995). Plant specimens were identified and then accessioned by matching them with the labelled herbarium specimens lying in the departmental herbarium (KASH herbarium) of Kashmir University, Srinagar (Jammu & Kashmir), where one copy of every specimen was deposited for authenticity and future use. Apart from that, available floristic literature (Kirtikar and Basu 1933-1935; Wali and Tiker 1964; Javeid 1968; Nasir and Ali 1970-1987; Stewart 1972; Kachroo et al. 1977; Kachroo 1978; Nawchoo and Kachroo 1995) and various publications dealing with the flora of temperate regions were also consulted for identification purposes. Finally one more copy of every specimen was deposited in the herbarium section of the Department of Botany, Government Narmada Post Graduate College, Hoshangabad (M.P), for authenticity and future use.

Figure 1: Location map of the study area (Bandipora District).

Results and Discussion

During present study, a total of 42 species belonging to 28 different families were found to be used as effective medicines by the local people to cure various human and livestock ailments. The highest number of medicinal plants were recorded in two families viz. Asteraceae (9 spp.) and Lamiaceae (4 spp.) followed by families Ranunculaceae, Malvaceae and Solanaceae (2 spp. each) while all other families included only one species. Plants were reported to grow in diverse range of habitats such as plains, for-
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The collected plants were herbs (Tantray et al. 2009). While on the basis of plant parts used, it was observed that the maximum plant species (29%) were found to be used as various parts such as leaves, roots, flowers, seeds and fruits etc. followed by whole plants (23%), roots (15%), leaves (15%), rhizomes (9%), seeds, latex and stems (3%) to cure various ailments (Fig. 2). Medicines were used in different forms including powder, paste, poultice, decoction, juice and infusion. In our study paste was found to be used more often followed by powder, decoction, infusion, poultice and juice. In the preparation of various drugs water was used as solvent but occasionally drugs were prepared with milk, oil or ghee-clarified butter made from cow’s milk (Jain et al. 2010). While gathering the medicinal plants from their habitats, it was reported that the people of the study area avoided collection of those plants which were infected by insects, pests and other diseases. Even for the preparation of indigenous medicines, they refrained from collecting the plants affected by toxicity, sunstroke, hailstorms, high wind velocity and fire. Only plants that were fresh and best in all respects were preferred (Kala et al. 2005; Samal et al. 2010). Ethnomedicinal properties of certain plants being used for the treatment of various ailments prevalent in the area are given below in the Table 1 mentioning plant’s botanical name, local name, family, accession number, habit and their ethnomedicinal uses, including plant part used and mode of administration.

Results also show that the people of Bandipora district used these plants through different modes of preparation for curing various ailments, ranging from simple to highly complicated, such as rheumatism, asthma, diarrhoea, dysentery, sprains, wounds, boils, throat infection, chilblains, toothache, urinary disorders, jaundice, indigestion, flatulence, cough, general body weakness, gaseous bloat, fever, diarrhoea, warts, anorexia, wounds, cold, headache, hair fall, warts, skin diseases, gynecological disorders etc. Same trend was also noticed by many other workers (Ara and Naqshi 1992; Lone, 2003; Malik et al. 2011). Most herbal drugs were prepared from a single species; however some applications were prepared with a mixture of different plants/plant parts with the understanding that synergistic effect of different species of plants improved the cure rates. The choice of use for herbs was noticed to be influenced by many factors such as season of the year and knowledge of other species. People who lived at lower altitudes of the district had no easy access to herbs found at higher altitudes such as Aconitum heterophyllum, Aconitum violaceum, Arnebia benthamii, Bergenia ciliata, Euphorbia wallichii, Inula racemosa, Jurinea dolomiae, Picrorhiza kurroa, Podophyllum hexandrum, Saussurea costus, Valeriana jatamansi etc, hence their first choice remained the species available in and around their homes. However, people especially tribals who lived at higher altitudes and had vast knowledge of these important medicinal plant species would collect and store them and eventually made available to others residing at lower altitudes. Of the 42 plant species, 26 species were reported growing at lower altitudes and were easily available to most of the inhabitants. Herbs such as Cotula anthemoides, Adiantum capillus-veneris and Datura stramonium were used to cure Chilblain; a painful itching swelling caused by exposure to severe cold during winter and is locally called “Shuh”. Similarly many herbs were used in the treatment of arthritis, but Saussurea costus was considered to be the most potent for it (Tantray et al. 2009; Malik et al. 2011; Kumar and Hamal 2011).

These days plant based traditional knowledge has become an important tool for the search of new source of drugs and pharmaceuticals. Medicinal plants are living resources, exhaustible if overused but sustainable if used with care and wisdom. It is noticed that the people living in urban areas have almost no knowledge about medicinal properties of plants (Alcorn 1984; Altieri and Merick 1987). In rural areas however, the people especially elders and females have a sufficient knowledge about this prosperous natural treasure, which is gifted to mankind by God. The important factor to use plants in curing various ailments is the higher prices of allopathic medicine and unavailability of better medicinal facilities (Qureshi et al. 2006). Thus, rural communities have useful knowledge about various herbal remedies which they have received after generations of experimentation. This knowledge is descended to...
them from their forefathers in the form of oral folklores and is often kept a heavily guarded secret. The ways they diagnose various diseases are very interesting because they live in the interior areas and lack the use of modern scientific equipments for treatment. They however treat diseases using locally available medicinal plants (Santhy et al. 2006).

While on surveys, ethnomedicinal data was gathered by consulting people of different ethnic groups such as Gujjars, Bakkerwals, Bhoris and also some knowledgeable persons of the plains. Gujjars are generally permanent settlers at the foot hills of Himalayas. Besides breeding their own livestock, they also take care of the animals of other communities, fulfilling the role of village cowherd. Since, due to harsh climatic conditions such as heavy snowfall and low temperature (sometimes below minus 10) during winter, the hilly areas of Bandipora district remain cut off from the rest at least for two and half months every year, Gujjars had to depend upon wild resources for their daily needs. Bakkerwals on the other hand are goat/sheep herders generally. They are nomadic tribe and high altitude goat herds/shepherds essentially. Bakkerwals lead a lonely and tough life in the high altitude meadows of the Himalayas and Pir Panjal ranges (Bhat et al. 2012). While interacting with Bakkerwals it was found that they actually belonged to the Rajouri and Poonch districts of J&K and visited the study area every year in the months of April and May (Lone et al. 2013). They take their livestock animals high into the mountains, above the tree line to graze in the lush meadows. They travel by foot and it takes them as many as thirty days to reach these meadows. During the summer, they move from one meadow to other and ultimately leave the district in the months of August and September. They are accompanied by their dogs to guard the sheep/goats and their pack animals. Both these ethnic groups have their own knowledge of traditional herbal medicine inherited from their fore-fathers. These medicines are well accepted by the local people since generations have experienced their efficacy in alleviating a variety of diseases (Tantray et al. 2009). Besides, these ethnic groups have to rely on the traditional system as they do not have the modern medicinal facilities available in the vicinity.

Traditionally, Bhoris are the herbal medicine practitioners of this indigenous medicine system, who use to buy important medicinal plants from needy people living both in plains as well as in tribal areas (Lone et al. 2013). They either visit the areas by themselves or the same people come to them for selling these plants. The people especially tribals, who sell herbal medicine in return get a little money to sustain their basic needs of livelihood. Bought medicinal plants are then prescribed and sold simply by establishing small shops not only in small villages but also in semi urban and urban areas. These practitioners commonly diagnose each health problem by an interview and by physical/visual inspection of the patient. Changes in eye and skin colour, tongue and throat regions, body temperature and status of sores are all visually inspected by the practitioner and the remedy is prescribed. Earlier prescribing herbal medicine to the patients by them was free of cost, because taking fees for any kind of treatment was highly discouraged as they believed that health care was an essential need and if a fee was charged that the poor might be deprived from treatment. In return, local people would provide them some donation in the form of cereals, pulses and vegetables. But now they not only prescribe herbal medicines but also sell it at the cost of money. However, the low cost of herbal medicine and its unlikely income is one of the reasons that youth of Bhoris are discouraged from carrying forward this ethnomedicine prescribing profession and this is the reason that only few Bhoris were found in the study area. On the other hand, the cost of modern medicine is very high than the cost of indigenous medicine so there is a public demand for services (Samal et al. 2004). It would be appropriate to mention here that, earlier, in the study area, Bhoris were mainly the Kashmiri Pundits (followers of Hinduism) who had vast deep rooted knowledge of prescribing the patients by traditional herbal medicine. This knowledge was descended to them from their forefathers in the form of oral folklores, and is not yet documented. They enjoyed high respect and social status among the communities. But due to uprising turmoil that started in 1989 in the valley, they left the district in order to defend themselves and migrated along with this precious knowledge to other parts of the coun-

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try. This is the reason that a few abandoned shops that belonged to them were reported during the course of survey in the main market of Bandipora town. Until they stayed in the district they shared their precious medicinal knowledge with some Kashmiri Muslims among whom a few at present are carrying forward and practicing this profession.

Besides, our results also reveal that a major proportion (75%) of folk medicinal knowledge comes from people above the age of 55 years, while a small proportion (25%) of it comes from people between the ages of 37 and 50. To some extent this finding is in agreement with the investigation of Khan et al. (2011). Our results also indicate that men especially old ones were more informative of traditional knowledge of medicinal plants than women in the area probably because higher reaches had been under seize of security forces since decades in response to terrorist threats thus posing hindrances in the movement of women. Discussions and interviews with both old and young people and Bhoris indicated that the attitude of the younger generation is not interested towards continuing this traditional medicine system because they realized less opportunity in this tradition for getting immediate benefits mainly in terms of cash.

The availability of medicinal plants has drastically decreased due to increased marketing pressure, lack of job opportunities, increased population of the area and over-grazing by animals. Besides, indiscriminate harvesting by unskilled gatherers also poses a threat to this natural asset (William et al. 2002). There is no immediate conservation programme for this valuable source of medicinal flora. Since, some of the important plants such as Jurinea dolomiaea, Saussurea costus, Arnebia benthamii, Podophyllum hexandrum, Aconitum heterophyllum, Picrorhiza kurroa etc find their place in different threatened categories as described by IUCN, efforts need to be made with the view to protect these endangered plant species by creating awareness among the local people and giving them incentives to help in protecting these plants.

**Figure 2**: Plant parts used to cure various ailments.

**Table 1**: Locally available plants of Bandipora District (J & K) and their uses to cure various ailments.

<table>
<thead>
<tr>
<th>BOTANICAL NAME/ LOCAL NAME/FAMILY</th>
<th>ACCESSION NUMBER</th>
<th>HABIT</th>
<th>PLANT PART(S) USED</th>
<th>MODE OF ADMINISTRATION AND METHODS OF HERBAL DRUG PREPARATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Achillea millefolium</em> Linn. Bariguer (Asteraceae)</td>
<td>38895</td>
<td>Perennial herb</td>
<td>Leaves and flowers</td>
<td>The leaves and flower heads are crushed to make paste. Paste is gently applied on inflamed gums and aching teeth for desired results.</td>
</tr>
<tr>
<td><em>Aconitum heterophyllum</em> Wallich ex Royle Patris/Pivak (Ranunculaceae)</td>
<td>37804</td>
<td>Perennial herb</td>
<td>Roots</td>
<td>Dried root powder is made into paste by mixing with mustard oil. The paste so produced is applied over joints to cure arthritis. Root powder is given with water cure abdominal pain, dyspepsia, fever, headache, vomiting and gaseous bloat in cattle caused as a result of grazing of Durhaam (<em>Sorghum helepense</em>) at its juvenile stage.</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Part Used</th>
<th>Medicinal Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aconitum violaceum Jacq. ex Stapf. Mohand (Ranunculaceae)</td>
<td></td>
<td></td>
<td>Sundried flower petals and sugar after mixing are crushed. The same is then kept in air tight jar for about 10-15 days for fermentation. This fermented mixture is locally called as “Khambiri” which is used against cough, cold, fever, stomach problems and liver disorders. Minute dried root pieces are chewed and swallowed to cure dyspepsia, acidity, chronic diarrhoea and lung disorders such as cough and phlegm. Rhizome pieces are also taken in large doses to induce vomiting during food poisoning. Rhizome powder is mixed with mustard oil or ghee to make paste. Paste is used in case of rheumatism by its external massages.</td>
</tr>
<tr>
<td>Acorus calamus Linn. Vai (Araceae)</td>
<td></td>
<td></td>
<td>Roots and flowers.</td>
</tr>
<tr>
<td>Adiantum capillus-veneris Linn. Guetheer (Pteridaceae)</td>
<td></td>
<td></td>
<td>Dried rhizome pieces are chewed and swallowed to cure dyspepsia, acidity, chronic diarrhoea and lung disorders such as cough and phlegm. Rhizome pieces are also taken in large doses to induce vomiting during food poisoning.</td>
</tr>
<tr>
<td>Ajuga parviflora Benth. Jan-i-adam (Lamiaceae)</td>
<td></td>
<td></td>
<td>Leaf powder is administered orally with water to cure cough, stomach problems, intestinal infection and general body weakness. Water extract of fresh leaves given to cattle against weakness, indigestion and fever.</td>
</tr>
<tr>
<td>Althea rosea Linn. Szeposh (Malvaceae)</td>
<td></td>
<td></td>
<td>Dried flower petals are boiled in milk for about half an hour which are then removed and spread on a cloth, wrapped in it, and then tied over throat in order to overcome its pain and swelling. While the milk portion so obtained is taken orally against jaundice, kidney pains and urinary irritation. The whole dried plant is burnt to get ash which is mixed with water to form paste and the resultant paste is gently applied on scalp to fight strongly against dandruff.</td>
</tr>
<tr>
<td>Amaranthus caudatus Linn. Leesa (Amaranthaceae)</td>
<td></td>
<td></td>
<td>The whole plant is boiled in water for about half an hour and then the hot water bath so obtained is used to wash whole body to cure body muscular pains. Leaves are rubbed onto insect stings to relieve pain. Seeds possess a pungent smell and hence are kept in books and garments as insect repellents.</td>
</tr>
<tr>
<td>Anthemis cotula Linn. Fuckghasa (Asteraceae)</td>
<td></td>
<td></td>
<td>Leaves, flower tops the herb form an important ingredient of a combination of several different herbs such as seeds of Cuminum sativa, Malva neglecta, Foeniculum vulgare, fruits of Zizyphus jujuba, and fronds of Adiantum capillus-veneris. This combination is locally called as “Sharbeth”. The composite decoction of “Sherbeth” is given to cure jaundice, palpitation of heart, cough, cold, chronic constipation, fever and also acts as diuretic and a good blood purifier. Decoction is also given to ladies after childbirth to keep them healthy and strengthen their bones. Roots after crushing are applied as poultice over wounds for quick healing.</td>
</tr>
<tr>
<td>Arnebia benthamii (Wall. ex G.Don.) Johnst. Gaozaban/ Kahzaban (Boraginaceae)</td>
<td></td>
<td></td>
<td>Leaves, flowers, and roots.</td>
</tr>
</tbody>
</table>

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**Artmisia absinthium** Linn.  
_Tithwan_ (Asteraceae)  
37789  
Perennial Herb  
Leaves and inflorescences  
Fresh leaves and inflorescences are crushed and juice is squeezed from it which is mixed with a glass of lukewarm water or milk and administered orally as a best home remedy against roundworms, abdominal pain, fever and diabetes. Dried leaves after soaking in hot water are crushed and then spread on a cloth which is tied on sprained body parts to relive their pain and swellings.

**Berberis lyceum** Royle.  
_Kaodauch_ (Berberidaceae)  
38888  
Perennial shrub  
Roots  
Root bark is peeled off, dried and grinded to make powder. Powder is added to a glass of water and kept as such for an hour to make an infusion. Infusion is given to cure urinary problems, dropsy, internal injuries, body weakness and to control blood sugar level (diabetes). Root is rubbed with a small quantity of water on a slate to produce an extract. This extract is believed to possess cooling effect and is also antiseptic. It is applied to wounds externally. Root cuttings as thick as thumb are collected. One end of each cutting is placed on fire till it burns half and then is pressed on an iron plate so that oil comes out of it. The oil is collected and used externally in the treatment of eczema.

**Bergenia ciliata** Haw.  
_Zakhmiyat/Palpati_ (Saxifragaceae)  
37800  
Perennial Herb  
Roots and leaves  
Dried roots are grinded to make powder which is directly applied on non-healing wounds to avoid infection and stimulate healing. Powder is also given to cattle with warm water against diarrhoea, weakness and to enhance milk production in cows. In summer when days are very hot, fresh leaves are used to cover the head to cause cooling effect which inturn alleviates headache and fever.

**Cannabis sativa** Linn.  
_Bunga_ (Cannabinaceae)  
37791  
Annual herb  
Leaves and flowers  
The ‘charas’, an intoxicating drug used as narcotic, appetizer and diuretic, is obtained from this plant in the following two ways:  

1) The leaves and flowers are rubbed by hands and the sticky substance is collected.

2) Dried shoot of the plant is pounded and sifted. The material so obtained is placed in the maize cob sheath and well wrapped in rush and baked in hot ashes. Moreover dried leaves are grinded to make powder which is mixed with _ghee_ to make paste. This paste is applied externally on joints to cure rheumatoid arthritis.

**Capsella bursa-pastoris** (Linn.) Medik  
_Kralmond_ (Brassicaceae)  
37781  
Annual herb  
Leaves  
Leaves are either eaten raw after washing with water or cooked as vegetable and then taken for the treatment of abdominal pain, nose bleeding, intestinal problems and obesity.

**Cedrus deodara** (Roxb. ex D.Don.) G.Don.  
_Devdoor_ (Pinaceae)  
38851  
Perennial tree  
Stem  
The herb forms one of the ingredients of “Lossa Ghasa”. It is thoroughly boiled in water to prepare hot water extract. Ladies, after their deliveries, are advised to have bath with this hot water extract (after diluting it with more water) to cure headache, fever, body muscular pains and hair fall. During severe cold in winter, hot water extract is also used to wash feet and legs to give relief from chilblain and fever. Sometimes, the boiled herb is crushed and paste is made by mixing it with oil, turmeric and salt. The paste is then applied to the painful joints or sprained body parts to relive their pain and swellings.

**Cotula anthemoides** Linn.  
_Thulibabuel_ (Asteraceae)  
37780  
Annual herb  
Whole plant  
The ‘charas’, an intoxicating drug used as narcotic, appetizer and diuretic, is obtained from this plant in the following two ways:  

1) The leaves and flowers are rubbed by hands and the sticky substance is collected.

2) Dried shoot of the plant is pounded and sifted. The material so obtained is placed in the maize cob sheath and well wrapped in rush and baked in hot ashes. Moreover dried leaves are grinded to make powder which is mixed with _ghee_ to make paste. This paste is applied externally on joints to cure rheumatoid arthritis.
<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Family</th>
<th>Type</th>
<th>Part Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cuscuta reflexa Roxb.</td>
<td>Cuscutaceae</td>
<td>Perennial</td>
<td>Herbaceous parasite, whole plant</td>
</tr>
<tr>
<td>Kuklipoth (Cuscutaceae)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Datura stramonium Linn.</td>
<td>Solanaceae</td>
<td>Annual</td>
<td>Leaves, seeds and fruits</td>
</tr>
<tr>
<td>Datur (Solanaceae)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equisetum arvense Linn.</td>
<td>Equisetaceae</td>
<td>Perennial</td>
<td>Whole plant</td>
</tr>
<tr>
<td>Gandumgund (Equisetaceae)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Euphorbia wallichii Hook.f.</td>
<td>Euphorbiaceae</td>
<td>Perennial</td>
<td>Latex of whole plant</td>
</tr>
<tr>
<td>Gur-Dud (Euphorbiaceae)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ficus carica Linn.</td>
<td>Moraceae</td>
<td>Perennial tree</td>
<td>Fruits and latex, whole plant</td>
</tr>
<tr>
<td>Anjeer (Moraceae)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Galium aparine Linn.</td>
<td>Rubiaceae</td>
<td>Annual</td>
<td>Whole plant</td>
</tr>
<tr>
<td>Zoa Ghasa/ Khurti (Rubiaceae)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyoscyamus niger Linn.</td>
<td>Solanaceae</td>
<td>Biennial</td>
<td>Seeds and leaves, whole plant</td>
</tr>
<tr>
<td>Bazarbunga (Solanaceae)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inula racemosa Hook.f.</td>
<td>Asteraceae</td>
<td>Perennial</td>
<td>Roots</td>
</tr>
<tr>
<td>Poshkar (Asteraceae)</td>
<td></td>
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<tr>
<td>Iris kashmiriana Baker.</td>
<td>Iridaceae</td>
<td>Perennial</td>
<td>Rhizome</td>
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<tr>
<td>Mazarmund (Iridaceae)</td>
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The herb is dried, crushed into powder and mixed with oil to make paste. Paste is used to cure skin diseases by its external application. It is also massaged gently on scalp to check hair fall and fight strongly against dandruff. Whole plant decoction is taken in case of migraine, severe fatigue and weakness. Poultice of fresh herb is spread on a cloth and tied over testicles to cure their swellings.

Dried seeds along with the dried leaves of Juglans regia are boiled in water to prepare hot water extract which is used to wash the feet during severe cold in winter to treat Chilblain. Dried seeds are smoldered in firepots to emanate smoke which is inhaled and allowed to remain in mouth without swallowing for half a minute and then expelled. The process is repeated 5-7 times for relieving toothache. Fresh leaves are rubbed on the parts of body stung by insects to relieve pain and itching. Dried seeds are also taken as such to cure paralysis of body organs. They are also given to horses against cold and to keep them healthy. Sometimes seed powder is mixed with oil or ghee to make paste which is applied externally in case of headache and rheumatism. Smoke produced by burning of dried fruits is used to expel leeches from the nostrils of cattle which enter them during grazing in water.

The plant being rough in texture is used to clean the teeth and to avoid their infection. Dried plant is made into powder and taken orally along with warm water against stomach acidity and gases. Powder is also made into paste by mixing with water which is externally applied on abdomen to promote the urine flow.

The entire herb yields yellow colored latex which is highly poisonous. Latex is used to cure warts and skin infections by applying it externally.

Ripe fruits are eaten raw. Fruits after harvesting are sun dried and then preserved in the form of garlands at home. Dried fruit decoction is given against abdominal pain, cold, asthma, constipation, jaundice, kidney and gallbladder stones, indigestion, liver enlargement and as blood purifier. The same decoction is given to fresh mothers after childbirth to enhance their lactation. Sometimes preserved fruits are chewed and swallowed along with honey as an effective remedy against constipation and high blood pressure. The milky latex of the plant is applied topically to the eczema to relieve itching and stimulate healing.

The whole plant after crushing is made into poultice. In case of sheep and goats it is externally applied on wounds and tied above over by a soft cloth as best antiseptic.

Dried seeds are smoldered to emanate smoke which is inhaled and allowed to remain in mouth without swallowing for half a minute and then expelled as a domestic remedy against toothache. Dried leaf powder is smoked in cigarettes as sedative. Powder is made by grinding seeds which is then mixed with mustard oil to make paste. Paste is massaged on arthritic joints and eyelid abscesses to alleviate pain.

Roots are dried and then grounded to make powder which is administered orally with lukewarm water or milk as domestic remedy to cure fever, cough and chest pain by clearing the phlegm from the chest. Paste is made by mixing powder with ghee. It is applied on wounds to avoid infection and stimulate healing.

The plant is most commonly grown on grave yards as rodent repellent. The rhizome is dried, and made into powder which is mixed with oil to make paste. The paste is applied externally on painful joints, eczema and wounds for desired results. A mixture of rhizome powder, water and gur (raw sugar) is made into semi-solid balls which are given as tonic to cattle against general body weakness.
Ethnomedicinal Studies of Plants of Bandipora Kashmir

Jurinea dolomiae Boiss.  
Dupha/Thandi Jaid/Guggal Dooph  
(Asteraceae)  

Perennial herb  
Roots and leaves  
Tea is made by boiling dried root powder in one glass of water with two spoons of sugar and half cup of milk. It is taken in case of cough, cold, headache, thirst and whitening of tongue. Root powder is also mixed with oil and common salt to make paste which is applied on wounds to help them to heal and on boils to help them to ripe and burst. Root decoction is mixed with maize flour and ghee to form a semi-solid mixture. It is considered to be highly energetic and taken orally to cause excessive sweat formation which in turn gives relief from fever and arthritis. Moreover, at some places leaves are used as vegetable and dried roots are burnt to produce smoke of good smell which is considered to be demon repellent.

The leaves of the herb are usually cooked as vegetable and taken to cure constipation. Leaves after soaking in hot water are crushed and mixed with cow-butter to make paste which is applied to wounds for quick healing. Semi-solid balls are also made from this paste which are given to newly born calf twice a day against constipation and cows to facilitate the detachment and expulsion of placenta after delivery. Dried seeds form an important ingredient of a combination of several different herbs such as seeds of Cydonia oblonga, Cucumis sativa, Foeniculum vulgare, leaves and flowers of Arnebia benthamii, fruits of Zizyphus jujuba, and fronds of Adiantum capillus-veneris. This combination is locally called as “Sharbeth”. The composite decoction of “Sharbeth” is given to cure jaundice, cough, cold, chronic constipation, fever and also acts as a good blood purifier. It is also given to nursing mothers against dysgalactia (lactation problems).

Leaves are dried and grinded to make powder which is then mixed with dilute curd locally called “lassi”. Lassi is given to cure dyspepsia, loss of appetite, acidity, abdominal pain, dysentery, constipation, farting and intestinal infection caused due to worms. Leaf decoction is given to ladies to ease the menstrual flow.

3-5 gms of dried seeds are put in a glass of water with two teaspoonful of sugar and half of a cup of milk. The mixture is kept as such for one hour. The seeds swell due to the absorption of water and a tasty drink is prepared which is locally called as “Babbir-Treish”. This drink has a cooling effect and is taken against fatigue, kidney stones, urinary problems, chronic constipation and fever. The leaves form an ingredient of “Lossa Ghasa”. It is thoroughly boiled in water to prepare hot water extract. Ladies, after their deliveries, are advised to have bath with this hot water extract after diluting it with more water to cure headache, fever, body muscular pains and hair fall.

Rhizome is dried completely, grinded and converted into powder which is administered orally along with water as a best home remedy against round worms, intestinal infection, and stomach disorders. Powder is also mixed with wheat flour, gur (raw sugar) and water and the mixture is made into semi-solid balls which are given to cattle especially horses against pneumonia, tapeworms, and to keep them healthy during cold season. Sometimes powder is mixed with sugar and packed in bottles which are placed in open sunlight to ripen (undergo fermentation). This fermented powder, locally called “Khabmir”, is given in case of weakness, whooping cough and joint pains.

Leaves are taken as vegetable at some places. Dried seeds are added to warm water to make an infusion which is then kept in an open sky overnight. The cool infusion so prepared is then given on an empty stomach next day early in the morning to cure body pains, urinary irritation, dysentery, constipation and fever.

Ripe fruit juice is eaten against stomach ulcers and dyspepsia. Powder obtained from the dried root is administered orally along with water to overcome tumorous growths. Root powder is also mixed with oil to make paste which is used as a remedy to skin diseases such as rashes and eczema.
### Portulaca oleracea Linn. Nunner

**Family:** Portulacaceae  
**Type:** Annual herb  
**Part used:** Whole plant  

The herb is taken in the form of vegetable for the treatment of constipation, body pains, weakness, improve eye vision and also to purify blood.

### Prunella vulgaris Linn. Kalaveuth

**Family:** Lamiaceae  
**Type:** Perennial herb  
**Part used:** Leaves and flowers  

Leaves are usually taken as vegetable at juvenile stage for the treatment of constipation, general body weakness and back pain. Fresh leaf is gently placed in warm oil till it becomes soft. It is then wrapped in a piece of cloth and applied on boils as a poultice which enables them to ripe and burst to evacuate the pus. Fresh root is crushed, mixed with salt and made into semi-solid balls which are given to cattle to cure cough, gaseous bloat and sprained body parts.

### Rumex dentatus Linn.

**Family:** Polygonaceae  
**Type:** Annual herb  
**Part used:** Leaves and Roots  

Fresh leaves and flowers are placed in muslin and grinded with a pestle. Juice is then squeezed from it. Juice is applied on skin rashes, eruptions, eczema and minor cuts. Root powder is administered orally with water to cure stomach problems, dysentery and urinary disorders. An infusion of flower powder is given to sharpen the eyesight.

### Senecio chrysanthemoides D.C.

**Family:** Asteraceae  
**Type:** Perennial herb  
**Part used:** Leaves, flowers and roots  

Roots are dried, grinded and made into powder which is applied externally minor wounds and blisters to avoid infection and stimulate healing. Leaves after soaking in hot water are fried in oil after which curd and salt is added to make a special dish locally called as “Yakhni”. It is taken with cooked rice to cure high blood pressure. Sometimes the plant is used to treat the paralyzed body parts by putting them on affected parts.

### Taraxacum officinale Weber ex Wiggers.

**Family:** Asteraceae  
**Type:** Perennial herb  
**Part used:** Leaves and roots  

At juvenile stage, leaves are usually taken as vegetable. Dried cooked leaves are fed to fresh mothers up to 40 days after childbirth against blood loss, jaundice and urinary irritation. It also strengthens their bones and overcomes general body weakness. The herb is also considered a good bind and hence in order to cure the bone fractures, dried leaves after soaking in hot water are crushed and made into poultice which is spread on a cloth and then tied on the fractured limbs. Root decoction is used to cure cold, abdominal pain, thirst and to promote urine flow.

### Urtica dioica Lnn.

**Family:** Urticaceae  
**Type:** Perennial herb  
**Part used:** Roots and leaves  

Roots after complete drying are stored for later use. They are grinded into powder which is taken orally with warm water against abdominal pain, worms, diarrhoea, fever and urinary disorders. Powder is also mixed with oil to make paste which is applied on wounds for healing.

### Valeriana jatamansi Jones.

**Family:** Valerianaceae  
**Type:** Perennial herb  
**Part used:** Roots  

Roots are dried, grinded and made into powder which is applied externally minor wounds and blisters to avoid infection and stimulate healing. Leaves after soaking in hot water are fried in oil after which curd and salt is added to make a special dish locally called as “Yakhni”. It is taken with cooked rice to cure high blood pressure. Sometimes the plant is used to treat the paralyzed body parts by putting them on affected parts.

### Verbena officinalis

**Family:** Verbenaceae  
**Type:** Perennial herb  
**Part used:** Whole plant  

Fresh herb is crushed and then juice is squeezed from it which is taken orally in case of indigestion and food poisoning. Dried herb is grinded to make powder which is applied on wounds and non-healing boils.
Figure 3: Certain locally available medicinal plants of Bandipora District.
Figure 2: Certain locally available medicinal plants of Bandipora District.

(A): Research scholar interviewing local people (Gujjars) of the study area about local plant use.

(B): A guided field trip to high altitude Kresal area (Bandipora) to collect plant specimens from wild habitat.
Conclusion

In meeting the primary health care needs of the rural communities of Bandipora district, the use of medicinal plants against different ailments plays a significant role keeping in view the high cost and side effects of allopathic medicine. The study area is fairly rich not only in medicinal plant species but also has deeply rooted traditional knowledge among the people. Utilization of indigenous drug resources will increase the local industry on one hand and minimize the expenditure incurred on the purchase of foreign drugs on the other. In view of the present study of medicinal plants, research and conservation efforts should be focused on these resources of the area so that in future the coming generation could benefit from these precious plants that are a real gift to mankind. In order to prevent the extinction and to conserve those plant species which find their place under different threatened categories of IUCN, active involvement of stakeholders especially the local people in the implementation, planning, evaluation and monitoring processes of plans and projects is urgently required as they are not only the well known persons but also beneficiaries of the area.

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References


