



## Survey of Wild Medicinal Plants used by Migratory Shepherds in Summer Hill of District Shimla in Himachal Pradesh

Radha<sup>1</sup>, Sunil Puri<sup>1</sup> and Ashok Pundir<sup>2</sup>

<sup>1</sup>School of Biological and Environmental Sciences, Shoolini University of Biotechnology and Management Sciences, Solan (Himachal Pradesh), India

<sup>2</sup>School of Mechanical and Civil Engineering, Shoolini University of Biotechnology and Management Sciences, Solan (Himachal Pradesh), India

(Corresponding author: Radha)

(Published by Research Trend, Website: [www.biobulletin.com](http://www.biobulletin.com))

(Received 05 March 2019; Accepted 05 May 2019)

**ABSTRACT:** In Himachal Pradesh migratory shepherds have rich traditional knowledge about medicinal plants and its uses, in this respect, an ethnobotanical survey was carried out from July 2017 to October 2018 in Summer Hill of Shimla district, Himachal Pradesh. 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 44 medicinal plant species were reported viz. *Achillea millefolium*, *Bergenia ciliata*, *Betula utilis*, *Cannabis sativa*, *Ficus religiosa*, *Picrorhiza kurroa*, *Rhododendron arboretum*, *Solanum nigrum* and *Zanthoxylem armatum* etc. This study shows that shepherds in tribal areas are highly dependent on wild medicinal plants, which evolved over generations of experience and practices, for the healthcare. This survey can help as baseline data on wild medicinal plant species used in Summer Hill of district Shimla and could be helpful in conservation of wild medicinal plants as well as traditional knowledge.

**Keywords:** Ethnomedicines, Shepherds, Summer Hill.

**How to cite this article:** Radha, Puri, Sunil and Pundir, Ashok (2019). Survey of Wild Medicinal Plants used by Migratory Shepherds in Summer Hill of District Shimla in Himachal Pradesh. *Bio Bulletin*, 5(1): 18-24.

### INTRODUCTION

The Indian Himalayan region (IHR) is characterized by its unique natural beauty. The different culture of India is a rich source of traditional medicines. Western Himalaya is a store house of natural vegetation. In India traditional knowledge, shows an important role in rural inhabitant's life. Today around 65% of Indian native peoples depend on the traditional medicinal plants. Rural inhabitant treats different types of diseases through their own traditional knowledge of system (Sharma and Rana, 2016). India is rich in its cultural assortment of a number of indigenous beliefs have retained traditional knowledge. In India it has been reported, about 90-95% collection of medicinal plants is from the wild area (Adhikari *et al.*, 2010). The hilly state of Himachal Pradesh is situated in the Western Himalaya with an altitude ranging from 350m to

7000m above mean sea level. Himachal Pradesh covers an area of 55,673 sq. km. and comprises a good heritage of medicinal and ethno-botanical flora and natural wealth in the North Western Himalayan region. Since long time traditional knowledge of ethnomedicines are used by our ancestors for their well-being and transferred verbally from one generation to next generation (Chowdhery, 1999). Majority of the rural societies possess traditional knowledge of natural resources, and they closely depend on this traditional knowledge for a variety of reasons related to the healthcare, social order, shelter, economy and food etc. Attention in herbal remedies has increased considerably as they are believed to be comparatively less toxic than the synthetic drugs and easily available from surroundings without any cost. But if the efforts are not made with instant effect, the rich traditional

knowledge possessed by tribal society will diminish soon. This calls for an urgent need to document ethnobotanical information.

Ethnobotanical work in Himachal Pradesh had been conducted by many workers (Sharma *et al.*, 2005; Sharma *et al.*, 2009; Sharma and Mishra, 2009; Dutt *et al.*, 2014; Radha and Puri, 2018; Kumar and Duggal, 2019).

The state of Himachal Pradesh is a home to sizeable tribal societies like the Kinnauras, Gaddis, Gujjar's and Pangwals. In Himachal Pradesh tribal migratory shepherds move with their livestock in search of green pastures, leaving for plains with the commencement of winter season and returning to their villages in summer season. Tribal migratory shepherds move from high hills in the month of July towards mid hills, and finally by September and October they reach plains where they temporally settle up to the month of March. Shepherds duration of stay from high hills to low hills and low hills to high hills often varies (Biswas and Rao, 2016). Therefore, current study is an attempt to document the

ethnomedicines used by migratory shepherds in Summer Hill of Shimla district.

There is no proper record available regarding the ethnomedicines used by migratory shepherds in Summer Hill of Shimla district. The ethnobotanical information on medicinal plants of Summer Hill is expected to provide new dimension's forever expanding pharmaceutical industry.

## METHODS

### A. Study area

Medicinal studies of the plants were undertaken between July 2017 to October 2018 covering different areas of Summer Hill (Fig.1). The area of Summer Hill lies in Shimla District, Himachal Pradesh. The area is dominated by thick forest. The local people inhabit this area and in the surrounding use several plants growing here in their routine life due to various medicinal beliefs which have been customary to their ancestors (Pracheta *et al.*, 2017).



Fig. 1. Study area.

### *B. Data collection*

The biodiversity of medicinal plants of Summer Hill was surveyed. For this survey, extensive field trips of the entire area of Summer Hill was undertaken between July 2017 to October 2018. The information on medicinal plant species used by tribal migratory shepherds in Summer Hill was collected by using interviews, pretested questionnaire, participatory observation and through discussion method. Only those medicinal plants were collected, which were most commonly used by the migratory shepherds for the treatment of a number of ailments with immediate effect. The specimens of medicinal plants being used by tribal 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 placed in the herbarium of the Shoolini University, Solan, Himachal Pradesh. Plants were identified either in the field itself through literature study (Jain, 1991) or with the help of experts from Forest Research Institute, Dehradun (Uttarakhand) and Botanical Survey of India, Dehradun (Uttarakhand).

### **RESULTS**

Man, and plants have been closely associated, inter dependent and interacting since the dawn of human civilization and they had the tendency to attain complete harmony with each other. The tribal people of our country are close associates of Mother Nature and true friends of the forests. The present study is carried out in areas of Summer Hill in Shimla district, Himachal Pradesh (Fig. 1), concerning the ethnomedicines used by migratory shepherds in their own traditional health care system. A total of 44 commonly used ethnomedicinal plants were documented in Summer Hill. Among these plant species, the maximum medicinal plants were used for cold, cough, wound healing and skin infection etc. Plants used by shepherds were tabulated in alphabetical order of botanical name, family, Hindi name, flowering and fruiting months, habit and parts used (Table 1). Moreover, the state of Himachal Pradesh has led to tribal ways of life, adherence to the myths and primitive customs and traditions (Singh and Batish, 2015). 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. The continuation of

traditional knowledge is risking as the transmission between the older and younger generations no longer exists (Yadav *et al.*, 2014; Kapoor, 2017).

Therefore, appropriate documentation of the traditional information through ethnobotanical studies is significant for the utilization of biological resources (Charjan and Dabhadkar, 2014; Thakur *et al.*, 2018; Bagga *et al.*, 2018).

In Himachal Pradesh unfavorable climatic conditions cause seasonal migration of shepherds from high hills to low hills. In the tribes of Himalayan region seasonal migration is a traditional process. It was perceived that migratory shepherds start their migration from high hills in the starting month of July and in October. There is at all times insufficiency of food, water and fodder for livestock and themselves. For this shepherds discover particularly degraded lands, adjoining areas, village and allow fields. Migratory shepherds during seasonal migration face limitations like fodder, water deficit, food, wild animal's attacks, predators, veterinary services and sometimes few road coincidences of their livestock (Rao *et al.*, 2011; Kalaiselvan and Gopalan, 2014; Charjan and Dabhadkar, 2014).

### **DISCUSSION**

The current study shows that areas of Summer Hill is rich in medicinal vegetation 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 Summer Hill, in district Shimla, Himachal Pradesh. The traditional knowledge, plant biodiversity, and cultural practices of the tribal people are facing high threat due to fast urbanization and uncontrolled browsing in these study areas. 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 migration. Forest play an important role in the lives of tribal migratory shepherds during their seasonal migration from high hills to low hills. The present study suggest that wild medicinal plants are important for shepherds living in tribal areas of Himachal Pradesh. It is also highlighted that satisfactory attention has not been put in promoting and conserving traditional wild medicinal plant species. There is an urgent need is to adopt large scale plantation of these wild medicinal plants within the forests so that the tribal shepherds are profited.

**Table 1: Ethnomedicines used by Migratory Shepherds in Summer Hill of District Shimla, Himachal Pradesh.**

Sr. No.	Botanical	Family	Common name	Flowering & Fruiting	Parts used	Habit	Ailments treated
1.	<i>Amaranthus viridis</i> L.	Amaranthaceae	Jungalichaulayi	July-October	Leaves, Roots	Herb	Skin infections
2.	<i>Argemone mexicana</i> L.	Papaveraceae	Satyanashi	Throughout the year	Whole part	Herb	Malaria
3.	<i>Adhatoda vasica</i> Nees	Acanthaceae	Arusa	December-June	Leaves	Herb	Cough, Cold
4.	<i>Achillea millefolium</i> L.	Asteraceae	Bhutkesi	June- December	Whole part	Herb	High Body pain, Respiratory infection
5.	<i>Berberis lycium</i> Royle	Berberidaceae	Karmashal	March-July	Fruits, Roots	Shrub	Nutritious for health, Jaundice
6.	<i>Bauhinia variegata</i> (L.) Benth	Fabaceae	Kachnar	April-November	Leaves, Bark	Tree	Skin infection
7.	<i>Bergenia ciliate</i> (Haw.) Sternb	Saxifragaceae	Pashanbhed	June-August	Rhizomes, Leaves, Flowers	Herb	Fever, Joint pains
8.	<i>Betula utilis</i> D. Don	Betulaceae	Bhojpatra	May-October	Seeds	Tree	Bone fracture
9.	<i>Celtis tetrandra</i> Roxb.	Ulmaceae	Khirk	February-April	Seeds	Tree	Indigestion
10.	<i>Cannabis sativa</i> L.	Cannabaceae	Bhang	June-September	Leaves	Herb	Abdominal pain
11.	<i>Cynodon dactylon</i> L.	Poaceaea	Doob, Durva	Throughout the year	Whole part	Grass	Cough, Headache, Skin allergy, Cold, High Blood Pressure
12.	<i>Chenopodium album</i> L.	Chenopodiaceae	Bathua	June -September	Seeds, Roots, Stem	Herb	Urinary infections, Sun burn
13.	<i>Commelina benghalensis</i> L.	Commelinaceae	Kana, Kankawa	Throughout the year.	Leaves, Roots, Flowers	Herb	Diarrhea, Eye problem
14.	<i>Dioscorea deltoidea</i> Wall. Ex Griseb	Dioscoreaceae	Singlimingli	July-October	Tubers, Leaves	Climber	Skin allergy, Wound healing, Burns
15.	<i>Eupatorium adenophora</i> (Spreng.) King & H. Rob	Asteraceae	Pamakani	March- April	Leaves	Shrub	Skin cuts
16.	<i>Eupobia hirta</i> L.	Euphorbiaceae	Duddhi	November-April.	Stem, Leaves	Herb	Jaundice
17.	<i>Ficus religiosa</i> L.	Moraceae	Peepal	November-February	Leaves, Bark	Tree	Skin allergy
18.	<i>Juglans regia</i> L.	Juglandaceae	Akhrot	April-October	Bark, Leaves, Fruits	Tree	Diarrhea
19.	<i>Hypericum oblongifolium</i> Choisy	Hypericaceae	Basant	May-September	Roots	Herb	Skin infection
20.	<i>Hedychium spicatum</i> Sm.	Zingiberaceae	Kapurkachri	July-October	Rhizomes	Herb	Asthma, Cough,

							Purify Blood, Headache,
21.	<i>Heracleum lanatum</i> Michx	Apiaceae	Patrala	June-July	Roots	Herb	Cough, Allergy complaints
22.	<i>Hippophae salicifolia</i> D. Don	Elaeagnaceae	Chuk	June-July	Bark, Fruits	Shrub	Sun burn
23.	<i>Lilium polyphyllum</i> D. Don	Liliaceae	Ksirakakoli	June-October	Roots	Herb	Energy source, Tonic
24.	<i>Lyonia ovalifolia</i> (Wall.) Drude	Ericaceae	Ayar	April-September	Leaves, Buds	Herb	Throat infections
25.	<i>Leycesteria formosa</i> Wall.	Caprifoliaceae	Piralu	June-November	Roots	Shrub	Skin infections
26.	<i>Morchella esculenta</i> Fr.	Morchellaceae	Guchhi	March- October	Whole part	Fungi	Indigestions
27.	<i>Oxalis corniculata</i> L.	Oxalidaceae	Amrul	April-October	Leaves	Herb	Stomach infection
28.	<i>Picrorhiza kurroa</i> Royle ex Benth	Scrophulariaceae	Karru	June -August	Leaves, Rhizomes	Herb	Asthma, Cough, Jaundice
29.	<i>Prunus cerasoides</i> D. Don	Rosaceae	Pajja	December-March	Fruits	Tree	Nutritious for health
30.	<i>Phytolacca acinosa</i> Roxb	Phytolaccaceae	Jharka	July -September	Leaves, Twigs	Herb	Nutritious for health
31.	<i>Rumex hastatus</i> D. Don	Polygonaceae	Churki	June-August	Roots, Shoots	Herb	Indigestion
32.	<i>Rhododendron arboretum</i> Sm.	Ericaceae	Burans	March- September	Flowers	Tree	Cough, Fever
33.	<i>Rhus parviflora</i> Roxb	Anacardiaceae	Samakdana	July-August	Bark	Shrub	Headache
34.	<i>Rubus ellipticus</i> Sm.	Rosaceae	Anehhu	February and April	Fruits	Shrub	Fever, Cough
35.	<i>Solanum surattense</i> Burm. f.	Solanaceae	Kantkari	April-August	Fruits	Herb	Stone in Bladder
36.	<i>Selinum vaginatum</i> C.B. Clarke	Apiaceae	Bhutkeshi	July-September	Leaves	Herb	Skin allergy
37.	<i>Trillium govanianum</i> (D. Don.) Kunth	Trilliaceae	Nagchatri	May-June	Leaves, Roots	Herb	Fever, Headache
38.	<i>Thymus serpyllum</i> L.	Lamiaceae	Banajwain	April-September	Leaves, Seeds	Shrub	Fever, Stomach problems, Cold
39.	<i>Urtica dioica</i> L.	Urticaceae	BichhuBooti	June-October	Leaves, Roots, Shoots	Herb	Wounds, Nutritious for health
40.	<i>Urtica parviflora</i> Roxb	Urticaceae	Kandali	June-October	Leaves, shoots	Herb	Sprain of foot
41.	<i>Verbascum thapsus</i> L.	Scrophulariaceae	Tamaku	June- August	Roots	Herb	Vomiting
42.	<i>Valeriana jatamansi</i> Jones	Caprifoliaceae	Muskbala	March-April	Leaves, Roots	Herb	Wounds, Headache
43.	<i>Vitex negundo</i> L.	Verbenaceae	Nirgandi	March- September	Leaves	Shrub	Joint pains
44.	<i>Zanthoxylem armatum</i> DC.	Rutaceae	Tirmir	April-June	Bark, Seeds, Fruits	Shrub	Tooth pain

## CONCLUSION

In rural area utilization of wild medicinal plants plays a significant role in the lives of inhabitants. In developing countries remote areas are mostly deprived of health and transport facilities, particularly due to insufficient spending in the health sector. This makes them to depend for the most part on what they get from the plants. Plant derived products are not only a resource to treat the ailments for the people but very often exhibit a significant market value by supplying raw material to pharmaceutical companies. There is a necessity to assemble the information from the local inhabitant, so that we can conserve the immense traditions of our country before it wiped out in the light of modernization and urbanization. Herbal products are the symbols of purity and safety rather than synthetic drugs, which may become fatal sometimes with adverse effects. This is very essential to intensify our traditional knowledge and to come back to nature. 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. 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.

## ACKNOWLEDGEMENT

We are deeply thankful to the migratory shepherds of the study area for their co-operation during the course of this study. I'm highly thankful to Botanical Survey of India, Dehradun (Uttarakhand) for plant specimen's identification.

## CONFLICT OF INTEREST

The authors have declared no conflicts of interest.

## REFERENCES

- Adhikari, B.S., Babu, M.M. Saklani, P.L. and Rawat, G.S. (2010). Medicinal Plants Diversity and their Conservation Status in Wildlife Institute of India (WII) Campus, Dehradun. *Ethnobotanical Leaflets*, **14**: 46-83.
- Biswas, M.P. and Rao, M.R.M. (2016). Socioeconomic status of Gaddi tribes in Himachal Pradesh: a Study. *International Journal of Advance Research*, **4**(8): 159-167.
- Bagga, J. Umakant, B. and Deshmukh (2018). *Acmella radicans* (Jacquin) R.K. Jansen (Asteraceae)—A new distributional plant record for Jharkhand State (India). *Journal on New Biological Reports*, **7**(1): 24-27.
- Charjan, A.P. and Dabhadkar, D.K. (2014). Ethnomedicinal Documentation of Some Antidiabetic Plants used by Tribal's of Amravati

- District, Maharashtra. *Biological Forum – An International Journal*, **6**(2): 546-549.
- Chowhery, H.J. (1999). Himachal Pradesh, in Mudgal V and Hajra P.K. (eds) Floristic diversity and conservation strategies in India vol II: in the context of state and union territories (BSI, Calcutta) 845-94.
- Charjan, A.P. and abhadkar, D.K. (2014). Ethnomedicinal Documentation of Some Antidiabetic Plants used by Tribal's of Amravati District, Maharashtra. *Biological Forum – An International Journal*, **6**(2): 546-549.
- Dutt, B. Nath, D. Chauhan, N.S. Sharma, K.R. and Sharma, S.S. (2014). Ethnomedicinal plant resources of Tribal Pangi Valley in District Chamba, Himachal Pradesh, India. *International Journal of Bioresource and Stress Management*, **5**(3): 416-421.
- Jain, S.K. (1991). Dictionary of Indian Folk Medicine and Ethnobotany. Deep Publication, New Delhi.
- Kalaiselvan, M. and Gopalan, R. (2014). Ethnobotanical studies on selected wild medicinal plants by Irula tribes of bolampatty valley, nilgiri biosphere reserve (NBR), Southern Western Ghats, India. *Asian Journal Pharm. Clin. Res.*, **7**(1): 22-26.
- Kapoor, G. (2017). Conservation and Development in Great Himalayan National Park-Western Himalaya. *Journal on New Biological Report*, **6**(3): 142-147.
- Pracheta, Kulshrestha, S. and Tripathi, R. (2017). traditional uses of medicinal plants of summer hill, Shimla. *World Journal of Pharmacy and Pharmaceutical Sciences*, **6**(8): 26-843.
- Rao, K.A. Rao, K.S. Rao, S.J. and Ravi, A. and Anitha, A. (2011). Studies on migration of sheep flocks in north coastal zone of Andhra Pradesh: identification of traditional migration tracts. *Indian J Small Ruminants*, **17**(2): 260-263.
- Radha, and Puri, S. (2018). Study of Ethnomedicinal Plants used by Migratory Shepherds in Renuka Forest Division of District Sirmour (H.P.) Western Himalaya. *Bio Bulletin*, **4**(2): 103-109.
- Sharma, S. and Rana, M. (2016). Commonly used Medicinal Plants in Tehsil Pachhad District Sirmour, Himachal Pradesh; *Pharma Tutor*, **4**(3): 34-38.
- Sharma, P.K. Chauhan, N.S. and Lal, B. (2005). Studies on plant associated indigenous knowledge among the Malanis of Kullu district, Himachal Pradesh. *Indian Journal of Traditional Knowledge*, **4**(4): 403-408.
- Singh, K.N.H.P. and Batish, D.R. (2015). Most prominent ethno-medicinal plants used by the tribals of Chhitkul, Sangla valley. *Ann of Plant Sci*, **4**(01): 943-946.
- Sharma, G., Joshi, P.C., Kumar, R., and Vasu, D. (2009). Floral diversity and limnological studies in and around Dholbaha dam (Punjab Shivalik, India). *Biological Forum—An International Journal*, **1**(1): 22-31.
- Sharma, P. and Mishra, N.K. (2009). Diversity, utilization pattern and indigenous uses of plants in and around a cement factory in

- Bilaspur district of Himachal Pradesh, North-Western Himalaya. *Biological Forum–An International Journal*, **1**(2): 78-80.
- Thakur, M.K. Waske, and Shubhangee (2018). Study of Medicinal Plants used by Local Herbal Healers in South Block of Seoni District (M.P.). *International Journal of Theoretical & Applied Sciences*, **10**(1): 95-99.
- Yadav, V.K. Deoli, J. Rawat, L. and Adhikari, B.S. (2014). Traditional Uses of Medicinal Tree Species in Renuka Forest Division, Western Himalaya. *Asian Pac J Health Sci*, **1**(2): 72-77.
- Sharma, V. (2016). Traditional Use of Ethnomedicinal Plants of Asteraceae in the Alpine Zone of Tungnath Region. *International Journal of Theoretical & Applied Sciences*, **8**(2): 54-57.
- Kumar, Gulshan and Duggal, Sampy (2019). Ethnomedicinal Diversity of Aromatic Plants in Foot Hill Regions of Himachal Pradesh, India. *International Journal of Theoretical & Applied Sciences*, **11**(1): 18-39.