

Ethnomedicines of Mussoorie Forest Division, Dehradun (Uttarakhand)

*Zaheer Anwar Ali,
Sarfraz Ahmad,
Parwez Ahmad
and
Shariq Ali Khan

Survey of Medicinal Plants Unit,
Regional Research Institute
of Unani Medicine
(CCRUM), Post Box 70,
Aligarh – 202001 (U.P.)

Abstract

The results of an ethnobotanical survey carried out recently in Mussoorie forest division, Dehradun are presented in this report. A total of 26 species belonging to 24 genera and 22 families of angiosperms, with medicinal use(s) has documented. For each plant species the current scientific and prevalent local name(s), the part used, medicinal use(s) and mode of administration are listed. The study has provided new information on many folk medicinal plants and their local uses. Potential of ethnomedicines with particular reference to discovery of new compounds and biological activities has been highlighted.

Keywords: Ethnobotanical survey, Ethnomedicines, Mussoorie, Dehradun, Uttarakhand.

Introduction

The district of Dehradun in Garhwal region of Uttarakhand possesses an interesting climate and varied flora (Babu, 1977; Gupta, 1928; Kanjilal, 1911; Raizada and Saxena, 1978). It is inhabited by various tribal communities. Among them Bhojas, Vangujjars and Jaunsar-Bawar are predominant. In spite of increasing healthcare facilities, rural populations of the area have retained their reliance on herbal healing. From different parts of this district, the use of diverse native floras in traditional medicine of many cultures has been reported (Chantia, 2003; Bhatt and Negi, 2006; Bist and Bhatt, 2012; Bist and Pundir, 2008; Gairola *et al.*, 2013; Jain and Puri, 1984; Negi *et al.*, 1992; Rana and Datt, 1997; Sharma *et al.* 1979; Sharma and Painuli, 2011; Singh and Pundir, 2004; Singh, 1997; Singh *et al.*, 2008; 1989, 1984; Upadhyaya, 2014). Therefore, survey team of the Regional Research Institute of Unani Medicine, Aligarh has conducted an ethnobotanical survey in different forests of this region. The main objective of this field study, besides recording folk medicinal claims prevalent among the indigenous communities, was to prepare an inventory of existing medicinal plants especially those used in Unani medicine. In this communication, some useful ethnomedicinal information gathered recently from the Mussoorie forest division, Dehradun is presented. The study represents a contribution on our existing knowledge on the contemporary herbal pharmacopoeia of the indigenous communities of this part of Garhwal.

The study area forms a part of Dehradun and Tehri Garhwal districts of Uttarakhand and lying between 30° 35' N latitude and 77° 18' E longitude in the

*Author for correspondence

foothills of the Garhwal Himalayan ranges (Fig. 1). The division is bounded by the Upper Yamuna Forest Division in the north and north east, Tehri Forest Division in the east, Dehradun Forest Division in the south and Chakrata Forest Division in the west. The entire division is mountainous. Mussoorie, the queen of the hill stations, is famous for its scenic beauty and excellent climate. The division comprises of six forest ranges viz. Badrigad, Deolsari, Jaunpur, Kempty, Mussoorie and Raipur which have dense tracts of intact natural forests. There are some scattered settlements of Vangujjars (a nomadic forest dwelling tribe). Other castes and cultural groups found here include Chauhans, Kandaris, Negis, Panwars, Tomers, Rais, Rawats, Gaurs, Joshis, Sharmas, Pandeys, Tiwari, etc. Their elders still possess good knowledge of the healing properties of local flora, acquired in the course of long experience and association with the forests.

Methodology

Fieldwork was carried out in March 2015 and information on folk medicinal uses of plants was obtained through direct field interviews with local medicine men and other knowledgeable villagers. Data on the common name of the plant or crude drugs, medicinal use(s), part used, other ingredients added (if any), method of drug preparation, mode of application, dosage and duration of treatment were recorded for each claim. Plant specimens were collected with the help of informants and later identified by the authors. All voucher specimens were prepared and deposited in the Herbarium of the Survey of Medicinal Plants Unit, Regional Research Institute of Unani Medicine, Aligarh (U.P.), India.

Observations

In the following listing, plants are arranged in alphabetical order by their botanical name together with respective family between parentheses, local name, locality and voucher specimen number, followed by claimed medicinal use(s) and mode of administration. As far as possible, duration of these crude drugs are also given.

Ageratina adenophora (Spreng.) R.M. King & H. Rob. (Asteraceae), 'Kalabansa', Deolsari (ZAA 9946). Fresh leaf juice is applied on cuts for healing.

Ajuga parviflora Benth. (Lamiaceae), 'Neelkanthi', Badrigad (ZAA 9996). A freshly made paste of the leaves, obtained by crushing is given orally once a day to improve eye vision. It is also given to relieve stomach-ache.

Asparagus adscendens Roxb. (Liliaceae), 'Kujer', Badrigad (ZAA 9928). Boiled roots are mixed with fodder and given as refrigerant in cases of cattle.

Berberis asiatica Roxb. ex DC. (Berberidaceae), 'Kingora', Deolsari (ZAA 10014). Root sap is used to wash the eyes suffering from conjunctivitis.

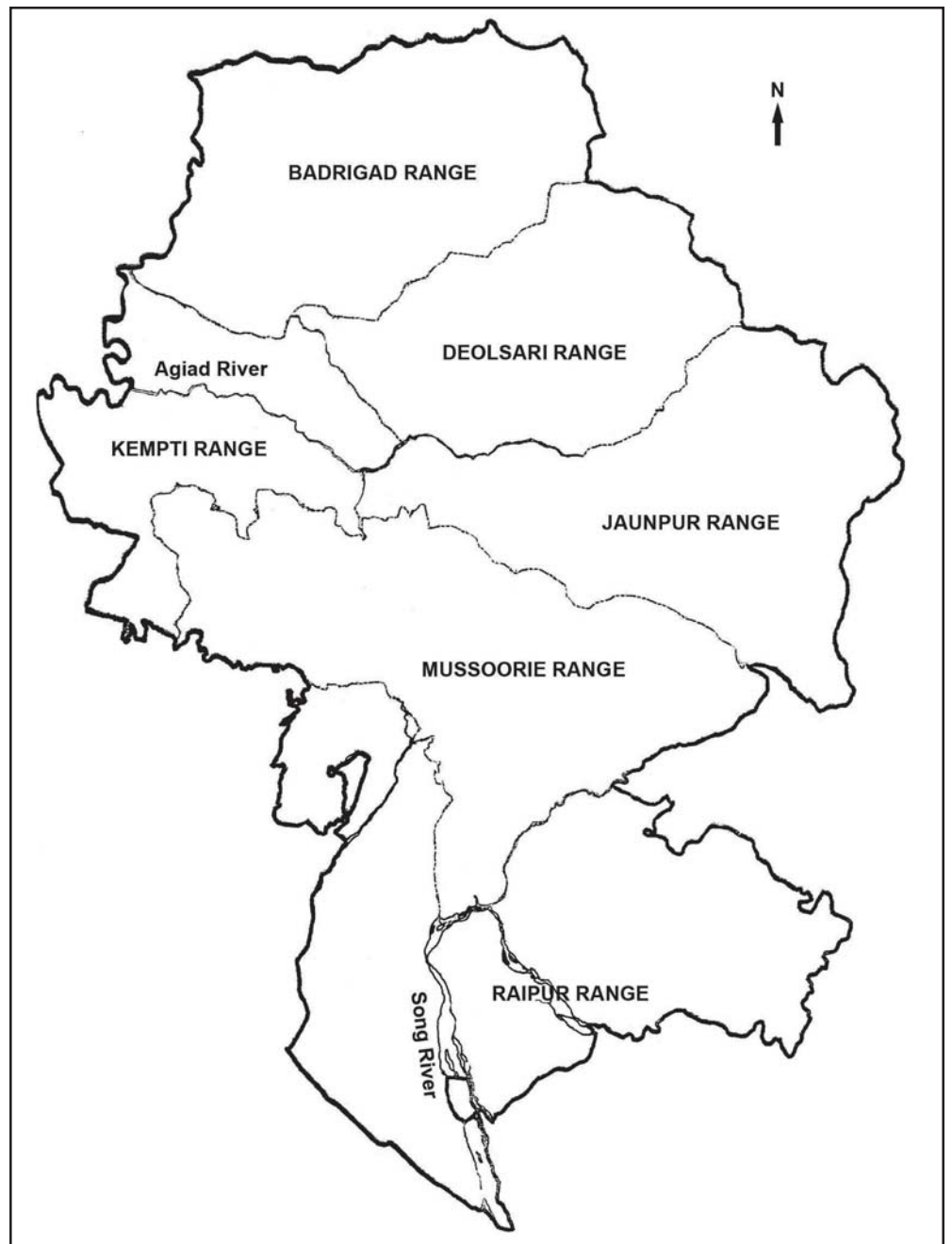


Figure 1: Map of the study area: Mussoorie Forest Division, Dehradun

Berberis lycium Royle (Berberidaceae), 'Kashmoi', Badrigad (ZAA 10018). Root infusion is given once daily to control diabetes.

Bergenia ciliata (Haw.) Sternb. (Saxifragaceae), 'Pattharchoor', Mussoorie (ZAA 9893). Root of this well-known herb is used to treat kidney stones. The paste of fresh root obtained by crushing is taken in a dose of 10 g twice a day to dissolve and expel small stones.

Calotropis gigantea (L.) Dryand. (Asclepiadaceae), 'Akawa', Raipur (ZAA 10037). Fresh latex is applied locally on corn of the sole to soften the tissues and remove it.

Capparis zeylanica L (Capparaceae), 'Bindara', Raipur (ZAA 10038). Fresh fruits are given to cows for inducing conception.

Cotoneaster microphyllus Wall. ex Lindl. (Rosaceae), 'Bhidara', Lasergaon (ZAA 10006). Roots are crushed and boiled; the liquid is strained and given orally for joint pain.

Cuscuta reflexa Roxb. (Cuscutaceae), 'Akashbel', Deolsari (ZAA 10004). Patients are advised to take daily bath in lukewarm decoction of crushed stems as a treatment of scabies.

Cynoglossum lanceolatum Forssk. (Boraginaceae), 'Hatang', Lasergaon (ZAA 10005). Whole plants are dried and ground to make a powder. About 10g of this powder are given once daily in renal calculus.

Fumaria indica (Hauskn.) Pugsley (Fumariaceae), 'Kerua', Badrigad (ZAA 9995). Decoction of whole plant is given orally for scabies.

Girardinia heterophylla (Vahl) Decne (Urticaceae), 'Bichhu', Thatyur (ZAA 9926). In winter season, vegetative buds are cooked and taken to prevent from cold.

Holarrhena pubescens Wall. ex G. Don (Apocynaceae), 'Kura', Badrigad (ZAA 9984). Stem bark powder is boiled in water till it become semisolid. One spoon of this is given with '*tirphala*' (a mixture of the powdered fruits of *Terminalia bellirica* (Gaertn.) Roxb., *T. chebula* Retz. and *Phyllanthus emblica* L.) for treating chronic constipation.

Justicia adhatoda L. (Acanthaceae), 'Rinchhain', Badrigad (ZAA 9893). Leaf decoction is given for cough.

Leucas lanata Benth. (Lamiaceae), 'Guma', Badrigad (ZAA 9974). Decoction of aerial parts is given for common fever.

Punica granatum L. (Punicaceae), 'Darimb', Deolsari (ZAA 9990). A mature fruit is hollowed and cut into two equal halves. One half pieces is filled with powdered catechu with little water. It is heated on fire directly for a short while then cooled and the material is given to lick for treating cough of children.

Rumex dentatus L. (Polygonaceae), 'Kharans', Badrigad (ZAA 9965). Leaf paste is applied externally on scabies.

Rumex hastatus D. Don (Polygonaceae), 'Bhilmora', Lasergaon (ZAA 9967). Fresh root piece is chewed and then swallowed for treating stomach-ache.

Some Important Folk Medicinal Plants of the Study Area



Figure 2: *Viola pilosa* Blume



Figure 3: *Justicia adhatoda* L.



Figure 4: *Bergenia ciliata* (Haw.)
Sternb.



Figure 5: *Berberis asiatica* Roxb.
exDC.

Salvia aethiopsis L. (Lamiaceae), 'Buddain', Lasergaon (ZAA 9998). Leaf paste is applied locally to treat dhobi- itch.

Smilax aspera L. (Smilacaceae), 'Kukurdara', Badrigad (ZAA 10006). Stem twig is used daily in the morning as toothbrush for oral hygiene.

Solanum incanum L. (Solanaceae), 'Kantkari', Thatyur (ZAA 9922). In cases of jaundice, a rosary of dried fruits is tied around the neck of the patient.

Thalictrum foliolosum DC. (Ranunculaceae), 'Morechapi', Jaunpur (ZAA 9930). Root paste is applied on boils to speed up suppuration and healing.

Verbascum thapsus L. (Scrophulariaceae), 'Ekalbeer', Lasergaon (ZAA 9925). Fresh leaf juice is instilled in the eye suffering from pterygium.

Viola pilosa Blume (Violaceae), 'Banafsa', Badrigad (ZAA 10015). Leaf and flower decoction is given for catarrh.

Zanthoxylum armatum DC. (Rutaceae), 'Timur', Mussoorie (ZAA 9971). Fruits are mixed with dried pieces of the root of 'banj' (*Quercus oblongata* D. Don) and ground to make a powder. This powder is used as dentifrice for oral hygiene.

Discussion

This paper provides a report on folk medicinal uses of 26 plant species revealed by the indigenous people of the Mussoorie forests. Data on medicinal uses were analyzed and compared with the available literature (Anonymous, 1948-1976; Chopra et al., 1956; Jain, 1991; Kirtikar and Basu, 1935; Nadkarni, 1954; Watt, 1889-1892) and it was found that uses of some species were similar to information already published in the literature. However, majority of these claims are new and imperfectly known and enrich our existing traditional knowledge on phytotherapy. These uses of medicinal plants are based on ancestral knowledge and empiric experience. Therefore, these species deserve scientific screening and evaluation for exploring their active constituents of therapeutic potential. Such studies may yield useful leads needed for the search of new biodynamic compounds of potential therapeutic value. As many modern drugs have their origin in Indian traditional medicine and ethnopharmacology (Mukherjee *et al.*, 2007; Patwardhan, 2005).

In the course of fieldwork it was observed that this ancestral knowledge of medicinal plants is in danger of being lost because younger generation does not show interest in traditional medicine. It is, therefore, desirable to conduct extensive field surveys of other ethnobotanically important areas of the state to protect and conserve the traditional ethnobotanical knowledge.

Acknowledgements

We are very grateful to Prof. Rais-ur-Rahman, Director General, Central Council for Research in Unani Medicine, New Delhi for providing necessary facilities for this field study. We express sincere thanks to all the informants who willingly shared their traditional knowledge with the authors.

References

- Anonymous, 1948-1976. The Wealth of India (Raw Materials). Vol. I-IX. CSIR, New Delhi.
- Babu, C.R., 1977. Herbaceous flora of Dehradun. CSIR, New Delhi.
- Bhatt, V.P. and Negi, G.C.S., 2006. Ethnomedicinal plants resources of Jaunsari tribe of Garhwal Himalaya, Uttaranchal, India. *Indian Journal of Traditional Knowledge* 5 (3):331-335.

- Bisht, A.S. and Bhatt, A.B., 2012. A contribution to the medicinal plants of Sahastradhara, district Dehradun, Uttarakhand (with ethnobotanical notes). *Journal of Drug Delivery & Therapeutics* 2(5):114-120.
- Bist, D.S. and Pundir, Y.P.S., 2008. Wild medicinal plants of Jaunsar-Bawar (Western Himalayas), Uttarakhand-II. *Indian Forester* 134(5):674-686.
- Chantia, A., 2003. Traditional knowledge of ethnomedicine in Jaunsar-bawar, Dehradun district. *Indian Journal of Traditional Knowledge* 2 (4):397-399.
- Chopra, R.N., Nayar, S.L. and Chopra, I.C., 1956. Glossary of Indian Medicinal Plants. CSIR, New Delhi.
- Gairola, S., Sharma, J., Gaur, R.D., Siddiqui, T.O. and Painuli, R.M., 2013. Plants used for treatment of dysentery and diarrhoea by the Bhoja community of district Dehradun, Uttarakhand, India. *Journal of Ethnopharmacology* 150: 989-1006.
- Gupta, B.L., 1928. Forest flora of the Ckakarta, Dehradun and Saharanpur forest divisions, Uttar Pradesh. International Book Distributors, Dehradun.
- Jain, S.K., 1994. Dictionary of Indian folk medicine and ethnobotany. Deep Publications, New Delhi.
- Jain, S.P. and Puri, H.S., 1984. Ethnomedicinal plants of Jaunsar-Bawar hills, Uttar Pradesh, India. *Journal of Ethnopharmacology* 12: 213-222.
- Kanjilal, U.N., 1911. Forest Flora of the Siwalik and Jaunsar Forest Divisions of United Provinces of Agra and Oudh. Government Printing Press, Calcutta, India.
- Kirtikar, K.R. and Basu, B.D., 1935. Indian Medicinal Plants, Vol. I-IV. Periodical Experts, Delhi, India.
- Mukherjee, P.K., Rai, S., Kumar, V. and Mukherjee, K., 2007. Plants of Indian origin in drug discovery. *Expert Opin. Drug Disco.* 2(5): 633-657.
- Nadkarni, A.K., 1954. Indian Materia Medica. Vol. I & II, 3rd Edition, Popular Book Depot, Bombay.
- Negi, K.S., Tiwari, J.K., Gaur, R.D. and Pant, K.K., 1992. Notes on ethnobotany of five districts of Garhwal Himalaya, Uttar Pradesh, India. *Ethnobotany* 5: 73-81.
- Patwardhan, B., 2005. Ethnopharmacology and drug discovery. *J. Ethnopharmacol.* 100: 50-52.
- Raizada, M.B. and Saxena, H.O., 1978. Flora of Mussorie, Dehradun.

- Rana, T.S. and Datt, B., 1997. Ethnobotanical observation among Jaunsar-Bawar, Dehradun (U.P.) India. *Int. J. of Pharmacognosy* 35: 371-374.
- Sharma, J. and Painuli, R.M., 2011. Plants used for the treatment of rheumatism by the Bhoxa tribe of district Dehradun, Uttarakhand. *Int. J. of Medicinal and Aromatic Plants* 1(1): 28-32.
- Sharma, P.K., Dhyani, S.K. and Shanker, V., 1979. Some useful and medicinal plants of the district Dehradun and Siwalik. *J. Sci. Res. Plant. Med.* 1(1): 17-43.
- Singh, D. and Pundeer, Y.P.S., 2004. Wild medicinal plants of Jaunsar-Bawar (Western Uttaranchal-I). *Indian Forester* 130: 1259-1271.
- Singh, K.K., 1997. Studies on native medicine of Jaunsari tribe of Dehradun district, Uttar Pradesh, India. *Int. J. Pharmacognosy* 35: 105-110.
- Singh, L., Sharma, N., Joshi, S.P., Manhas, R.K. and Joshi, V., 2008. Ethnomedicinal uses of some weeds in some agroecosystem of Doon Valley. *J. Econ. Tax. Bot.* 32(Suppl.): 97-103.
- Singh, N., Swami, A., Gupta, B.K. and Grover, S.P., 1989. Some noteworthy medicinal plants of commercial potential of Doon Valley. *Indian Journal of Physical and Natural Sciences* 9(Sec. A.): 24-33.
- Singh, V.K., Anis, M. and Khan, A.M., 1984. Folk medicinal claims of Chakrata forests, Uttar Pradesh, India. *J. Pl. Nature* 1: 16-21.
- Upadhyaya, D., 2014. An ethnobotanical study of plants found in Timli forest range, district Dehradun, Uttarakhand, India. *Int. J. of Advanced Herbal Science and Technology* 1(1): 13-19.
- Watt, G., 1889-1892. A Dictionary of the Economic Products of India. Vol. I-VI (Repri. 1972), Periodical Experts, Delhi.

