



ORIGINAL ARTICLE

Ethnomedicinal Plants Used in Kangra District of Himachal Pradesh, Western Himalaya, India**Rajinder Paul and Jamil Ahmed Khan**Department of Botany, Kisan P.G. College, Simbhaoli (Hapur)
Email: rajinderpaul777@gmail.com, jamilkhanmdr@gmail.comReceived: 24th Oct. 2016, Revised: 25th Nov. 2016, Accepted: 27th Nov. 2016**ABSTRACT**

The paper describes the relevance of indigenous medicine and health care practices prevalent among the 'Gaddi' tribe in Indian Western Himalaya, in terms of their contribution physical well-being of this tribal people. The present paper describes the use of 10 most important medicinal plants used by the Gaddi tribes of Kangra district of Himachal Pradesh. However, increasing demand of medicinal plants has resulted in the rapid dwindling of these natural resources and also because of high level commercial use posing a serious threat to the continuation of traditional medicinal practices which may have adverse effect on physical, social and economic well-being of the tribal people.

Key words: Medicinal plants, Gaddi, Indian Western Himalaya, Himachal Pradesh, Kangra

INTRODUCTION

Plants have been used both in the prevention and cure of various diseases of humans and their pets. With the advent of human civilization, many systems of therapy have been developed primarily based on plants. Ayurveda, Homeopathy, Sidda, Unani, etc. are our traditional systems of medicine. The plant-based traditional medical systems continue to provide the primary health care to more than three-quarters of the world's populace. The World Health Organization has estimated that over 80 % of the global populations rely chiefly on traditional medicine (Akerele, 1992).

Himachal Himalaya is rich in terms of natural plant wealth and associated indigenous knowledge. Out of around 3,300 species recorded so far from Himachal Himalaya, 150 species are attributed with medicinal uses. The number of plants of confirmed medicinal value is about 100 in which 40 plants products of medicinal value are regularly supplied by state (Anon, 1990a). The Himalayan harbors have a great diversity of medicinal plant species. The northeast Himalaya due to rich array of biodiversity has placed with eighteen biodiversity hotspots of the world. So far about 8,000 species of angiosperms, 44 species of gymnosperms and 600 species of pteridophytes have been reported from the Indian Himalaya (Singh and Hajra 1996), of these 1748 are known as medicinal (Samant *et al.*, 1998). The maximum medicinal plants (1717 species) have been reported around 1800 m elevation range. At regional scale, the maximum species of medicinal plants have been reported from western Himalaya (Kala, 2004), followed by Sikkim and north Bengal (Samant *et al.*, 1998). Of the total medicinal plants species, 62 species are endemic to the Himalaya and 208 species extend their distribution to adjacent areas, hence classified as near endemic. More than 200 Himalayan medicinal plants are consumed raw, roasted, boiled, cooked in the form of oil, species, jams and pickles (Samant *et al.*, 1998). About 81 species of Himalayan medicinal plants are known to exploit for extraction of oil, *Aeglemarmelos*, *Ricinuscommunis* and *Myricaesculenta* for example. Of the total 675 species of wild edibles, 171 are used as medicine (Samant *et al.*, 2001).

But in the recent past large scale exploitation of selected medicinal plants has resulted in the rapid dwindling of these natural resources and there is urgent need of conservation, their regeneration, protection in natural habitat to restore our biological heritage. Illegal and unscientific collections, over exploitation and trade have resulted the several species of *Angelica*, *Picrorhiza*, *Polygonatum*, *Aconitum*, *Ephedra* and *Swertia* to become threatened (Badola and Pal, 2002).

Gaddi of Himachal Pradesh represent one of the most primitive tribes of Kangra inhabiting in north eastern part of the district, especially the hilly tracks of Dharamshala, Shahpur, Nagari, Palampur, Bajnath, Lot, Krot, etc. Gaddis of Himachal are world famous. The word 'Gaddi' is a generic name

and major groups are Brahmins, Rajputs, Khatris, Thakur and Rathis (Fig. 02). These groups are scattered over Bharmour tehsil of Chamba district and Kangra district Uniyal *et al.* (2005). The word Gaddi means a shepherd. As a nomadic tribe, the Gaddis spend half of the year in their villages cultivating their field and the remaining half is spent in migration searching for grass and fodder for their herd and seeking seasonal employment for themselves. The religion of Gaddis is 'HINDUISM' (Fig. 03, 04, 05). The information regarding the traditional knowledge, local uses of the plants of the study area, containing the information about the local name of the plant, parts used, purpose for which used, mode of administration and curative properties were recorded through interviews and discussions with tribal people.

STUDY AREA

The present Kangra district came into existence on the 1st September, 1972 consequent upon the reorganization of districts by the government of Himachal Pradesh. The district lies between 31° 40' to 32° 25' longitude and 75° 35' to 77° 05' latitude and is bounded on the south-west by Una district, on the north-west by district Gurdaspur of Punjab state, on the north by LahaulSpiti and Chamba districts and on the east by Kullu and Mandi districts. While on the south it touches Hamirpur district. The elevation generally varies from 500 m to 5500 m above mean sea level. According to the Surveyor-General of India, the area of the district is 5,739 square kilometers. In terms of area, the district constitutes 10.31 % of the state area and ranks 4th among the districts.

METHODOLOGY

Field surveys were undertaken across the various tribal dominated areas during 2012 to 2014. Starting from lower elevation i.e. Shahpur, Dharamshala, Palampur, Bir, Baijnath, Barot and moving upto the higher elevation i.e. Chotta and Bara Bhangal, Kreri, Naddi, Rakh, Krot, HimaniChamunda, Shalli, Kandwari, Gwal-tikker and upto different passes and Jot of the Dhauladhar region, which increases the importance of the valley for the people devoted to indigenous system of medicine.

INTERVIEWS OF TRIBAL PEOPLE

Semi-structured questionnaire survey was conducted among selected tribal communities with a view to document the knowledge on the use of medicinal plants, the preparation of various medical formulations and way of their consumption. Information was also gathered on the local name of medicinal plants, plants part used in treatment and ailments being cured by the use of ethno-medicinal plants. Field visits were made with selected tribal people who have a sound knowledge of hilly areas and medicinal plants used in the locality. A total of 65 informants were included in the interview list where of these were male and 20 were female. All the interviews of local inhabitants, tribal people having knowledge about medicinal plants, only 35 tribal people provided required information regarding the use of specific plants, preparation of medical formulation made and identification of medicinal plants. Since there is a common belief among the indigenous people that if any secret regarding therapeutic value is revealed to anyone outside their own clan, the efficacy of plant will vanish, or it is the specific permission given only to their next generation or to a specific person of their choice. Qualitative information so gathered was verified by cross-examination with different tribal people.

COLLECTION AND IDENTIFICATION OF PLANT MATERIAL

Collection of voucher specimens has been done during flowering/fruitletting period to facilitate the process of identification. Identification of the plants specimen was done according to the field characters by consulting the various floras of Hooker and Thomson (1885), Chowdhery and Wadhwa (1984), Gaur (1999) and help from experts in the field of taxonomy. Doubtful plant specimens were compared with the specimens in the Herbarium of the Institute of Research in India System of Medicine, Joginder Nagar, District Mandi (H.P.) and Herbarium of CSIR Palampur, deposited for records in the Botany department of Kisan P.G. College Simbhaoli.

Evolving over a long period of time based on necessities and experiences, indigenous medicinal system is an important component of indigenous knowledge of the Gaddi tribal community, which is an important natural resource that facilitates the development process in cost effective,

participatory and sustainable ways and plays an important role in resource conservation. In the studied villages, more than 10 indigenous medicines are being practiced by the Gaddi community in healing different diseases using about plant species of medicinal value (table 1). The plant parts used for medicinal proportions are roots, rhizomes, leaves, flower, and whole plants. The most frequently utilized plant parts are root, followed by leaves, seed and whole plants.

From the above discussions it has been observed that the tribal inhabitants have their own plant classification according to use and effects on the health. No scientific studies exist on the ethnobotanical basis of plants, except scanty, unplanned work done on the enlistment and location of the valuable plants. The ethnomedicinal survey of the area revealed that the age old tradition of plant used as drugs practiced by tribal and local people of the area has been handed down from generation to generation and is still carefully preserved in this hilly area, but due to various anthropogenic activities, progressive modernization, urbanization and globalization, traditional knowledge system they possessed or inherited as a legacy may be vanished fast or polluted with the impact of modernity in future. This study may help in conservation, propagation and cultivation of precious herbs. The knowledge of above reported ethno medicinal plants of the study area further requires proper chemical & pharmaceutical experiments and clinical trials for the development of safe and effective drug preparation.

Table 1: Ethnomedicinal plants of Kangra district of Himachal Pradesh

S. No	Botanical Name	Local Name	Family	Ethnomedicinal Uses
1	<i>Aconitum heterophyllum</i> Wall. Ex Royle.	Atish, Patrikh,	Ranunculaceae	Fresh or dry roots powder is consumed with root powder of Karru (<i>Picrorhizakurooa</i>). About 5-10 gm of this mixture is consumed with water to cure bile problems and diabetes in empty stomach in morning and evening
2	<i>Aesculus indica</i> Colebr. Ex Cambess.	Kanor, Goo	Hippocastanaceae	Fruits are crushed and mixture kept in water of earthen pot. Mixture water is exchanged with fresh water every morning for seven days to remove bitterness of the paste and dry this paste. Dried paste with water and sugar cooked in 'deshi ghee' of buffalo or cow in pan. This dish is called 'sik or seera', given to ladies as nutritious diet to giving strength after delivery
3	<i>Angelica glauca</i> Edgew.	Chora, Chura	Apiaceae	About 15-20 ml decoction of roots is consumed twice a day to cure stomachache. About 10-15 ml decoction of root is taken twice a day to cure arthritis.
4	<i>Berberis aristata</i> DC.	Kashmal	Berberidaceae	Rasount is consumed with water for a week twice a day to cure jaundice and piles.
5	<i>Bergeniaciliate</i>	Patharchat	Saxifragaceae	Dry or fresh roots are chewed in toothache and mouth ulcers. Cuts and wounds: Roots paste is applied externally on cuts and wounds.
6	<i>Bergenia stracheyi</i>	Pashanbhed	Saxifragaceae	Dry roots are crushed and boiled in 150 ml water. When the 1/3 water left, it is consumed evening and morning for a week to cure throat infection.
7	<i>Cedrus deodara</i> (Roxb.) Loud.	Devdar, Klunen	Pinaceae	Oil is massaged on joints in rheumatism and consumed 2-3 drops of oil at the time of sleeping in night for few days to cure paralysis. Do not drink water at night after consuming the oil.
8	<i>Dactylorhiza hatagirea</i> (D. Don.)	Panja, Salampanja, Hanuman-Panjab	Orchidaceae	Roots powder is consumed with milk early morning in empty stomach to cure seminal weakness for few days. Fresh or dry roots are crushed and boiled in 100 ml water. About 10-20 ml decoction is consumed for two week twice a day to cure asthma.
9	<i>Paris polyphylla</i>	Shiv-Chura	Trilliaceae	Dry rhizome crushed and boiled in the water. This decoction is consumed to cure cough and cold.
10	<i>Picrorhiza kurroa</i> Royle. Ex Benth.	Kaur, Karru, Kutki)	Scrophulariaceae	Roots are ground with the roots of Atish (<i>Aconitum heterophyllum</i>). About 5-10 gm powder is consumed with 'Kujjemishri' evening and morning to cure jaundice.

Fig. 1-6: Gaddi Tribal People Collection Medicinal Plants and Discussion



CONCLUSION

Present work carries the results of ethno-medico botanical studies in Kangra district of Himachal Pradesh in Indian Western Himalayas. It gives the salient features of the use of plants as medicine by the tribal people. Traditional healers have a rich knowledge on medicinal plants that is however disappearing due to rapid pace of socio-economic changes, modernization and technological developments. To date, no exhaustive studies on ethnomedicinal plants had been done in the Kangra district of Himachal Pradesh state.

Human's factors are the major threats to the medicinal plants in particular in the study area. As suggested by most informants, in the area, the bio-resources along with the rich indigenous knowledge system are depleting so fast due to various anthropogenic activities and rapid urbanization.

Despite a rather poor knowledge of diagnosis, still people accurately diagnose the diseases and compare favorably with modern medical practices. The trend of using medicinal plant species is more in upper age in both genders as compared to younger age class. In the study area, 27 ailments of human were reported to be treated by traditional medicinal plants of the area.

REFERENCES

1. Akerele O. (1992): WHO guideline for assessment of herbal medicines. *Fitoterapia*, 63: 99-118.
2. Anonymous (1990): *Phytochemical Investigation of Certain Medicinal Plants used in Ayurveda*. Central Council for Research in Ayurveda and Sidha, New Delhi.
3. Badola H.K. and Pal B.M. (2002): Endangered medicinal plants species in Himachal Pradesh. *Curr. Sci.*, 83: 797-798.
4. Chowdhery H.J. and Wadhwa B.M. (1984): *Flora of Himachal Pradesh, Analysis, Vols. 1-3*. Botanical Survey of India, Calcutta.
5. Gaur R.D. (1999): *Flora of district Garhwal North West Himalaya with ethnobotanical note*, Tran media SrinagerGarhwal.
6. Hooker J.D. and Thomson (1885): *Flora Indica*. 1-7 Vol. Oxford.
7. Kala C.P. (2004): *The valley of flowers: myth and reality*. Dehradun: International Book Distributors.
8. Kala C.P. and Manjrekar N. (1999): Ethno-medicobotany of Indian Trans-Himalaya: a case study from Spiti. *J. Eco. Tax. Bot.* 23(1): 177-183.
9. Kapahi B.K. (1990): Ethno-botanical investigation in Lahaul (Himachal Pradesh). *J. Eco. Tax. Bot.* 14(1): 49-55.
10. Lal B., Negi H.R., Singh R.D. and Ahuja P.S. (2004): Medicinal uses of *Dactylorhiza hatagirea* among the natives of higher altitudes in western Himalaya. *J. Orc. Soc. India*, 18(1-2): 97-100.
11. Samant S.S., Dhar U. and Palni L.M.S. (1998): *Medicinal Plants of Indian Himalaya: Diversity, Distribution Potential Values*. HIMAVIKAS Publ. Gyan. Prakash, Nainital.
12. Samant S.S., Dhar U. and Rawal R.S. (2001): Diversity, rarity and economic importance of wild edible plants of west Himalaya. *Indian J. Forestry*, 24(2): 256-265.
13. Sharma P.K., Chauhan N.S. and Lal B. (2004): Observations on the traditional phytotherapy among the inhabitants of Parvati valley in western Himalaya, India. *J. Ethnopharm.* 92: 167-176.
14. Singh D.K. and Hajra P.K. (1996): Floristic diversity. In: Gujral G.S., Sharma, V. eds. *Biodiversity Status in the Himalaya*. New Delhi: British Council, 23-38.
15. Singh V., Kapahi B.K. and Srivastva T.N. (1996): Medicinal herbs of Ladakh especially used in Home remedies. *Fitoterapia*. LXVII (1): 3-48.
16. Sood S.K., Nath R. and Kalia D.C. (2001): *Ethnobotany of Cold Desert Tribes of Lahaul-Spiti (N. W. Himalaya)*. 228 pp. Deep Publication, New Delhi, India.
17. Uniyal S.K., Singh K.N., Jamwal P. and Lal B. (2005): Traditional use of medicinal plants among the tribal communities of ChhotaBhangal, Western Himalaya. *J. Ethnobiol. & Ethnomed.* 2: 14.