



Observations on traditional usage of ethnomedicinal plants in humans and animals of Kangra and Chamba districts of Himachal Pradesh in North-Western Himalaya, India



Meenakshi Thakur^a, R.K. Asrani^{a,*}, Shalini Thakur^a, P.K. Sharma^b, R.D. Patil^a, Brij Lal^c, Om Parkash^c

^a Department of Veterinary Pathology, Dr. G.C. Negi College of Veterinary and Animal Sciences, CSK HPKV, Palampur 176062, Himachal Pradesh, India

^b Krishi Vigyan Kendra Hamirpur, CSK HPKV, Palampur 176062, Himachal Pradesh, India

^c Institute of Himalayan Bioresource Technology, Palampur 176062, Himachal Pradesh, India

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ABSTRACT

Ethnobotanical relevance: Medicinal plants are frequently used by Gaddi and Gujjar tribes of Kangra and Chamba districts of Himachal Pradesh, India to cure various ailments in humans and livestock. Therefore, extensive field work was conducted to document the traditional use of ethnomedicinal plants by these tribes.

Materials and methods: Direct interviews of 208 informants were conducted. The data generated through interviews was analysed using quantitative tools such as use-value (UV), factor informant consensus (F_{ic}) and fidelity level (F_l).

Results: A total of 73 plant species in 67 genera and 40 families were observed to be medicinal and used to cure 22 ailment categories. The highest number of ethnomedicinal plants was recorded from the family Asteraceae followed by Lamiaceae, Apiaceae, Acanthaceae, Caesalpiniaceae, Polygonaceae, Ranunculaceae, Rosaceae and Rutaceae. Leaves were the most frequently used plant part used to treat various ailments followed by whole plant and roots or rhizomes. *Ajuga parviflora*, *Berberis lycium*, *Viola canescens*, *Vitex negundo* and *Zanthoxylum armatum* were the most important medicinal plants used for treating human diseases, whereas *Achyranthes bidentata*, *Aloe* sp., *Cassia fistula*, *Podophyllum hexandrum* and *Pogostemon benghalensis* were the most important medicinal plants used for treating animal diseases as per use value. The important ailment categories classified on the basis of factor informant consensus were gastrointestinal and respiratory disorders.

Conclusion: The present study revealed that people of the study area are extensively using the ethnomedicinal plants to cure various ailments. Plants with high use value and fidelity level should be subjected to pharmacological investigation for scientific validation.

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1. Introduction

Ethnobotany is the study of the uses of plants by indigenous people (Cox, 2000). It plays an important role in understanding the dynamic relationships between biological diversity and cultural systems (Mahmood et al., 2011a). Ethnobotanical surveys are helpful in preservation of traditional knowledge for future generation and other communities (Idolo et al., 2010; Mahmood et al., 2011a). Documentation of indigenous knowledge, in particular the medicinal values of plant species serves as sources of essential drugs (Cox, 2000). About 80% of the people of developing

countries are still dependent on traditional indigenous medicines for their basic healthcare (Malik et al., 2010; Mahmood et al., 2011b; Amjad et al., 2015).

The history of herbal medicine in India is very old. The oldest use of plants has been documented in ancient Hindu scriptures like *Rigveda* (4500–1600 BCE), *Charak Samhita* (1000–800 BCE), *Sushrut Samhita* (800–700 BCE) and others. Though, about 2000 plant species are reported to be used for medicinal purposes in Indian subcontinent, but 500 species are commonly employed in different indigenous systems of medicine prevailing in the country (Jain, 1994). Indian subcontinent is being inhabited by over 54 million tribal people dwelling in about 5000 forest dominated villages spreading across the country comprising 15% of the total geographical area (Nath and Khatri, 2010). Most of the tribal communities are still dependent upon local traditional healing

* Corresponding author.

E-mail address: asranirk@gmail.com (R.K. Asrani).

systems for their primary health care (Singh, 2008; Singh and Lal, 2008). Information from indigenous traditional medicine has played a vital role in the discovery of novel products from plants as chemotherapeutic agents (Katewa et al., 2004).

Physiographically, the state of Himachal Pradesh in North-Western Himalaya comprises of four different zones, i.e., dry temperate-alpine, moist temperate, sub temperate and sub tropical (Chauhan, 1999). Because of varied altitudinal gradients and climatic conditions, the state harbors rich plant diversity, including endemic and rare plants (Sharma and Lal, 2005). The state forest department has enlisted 91 commercially exploited non-timber forest product's species and 57 threatened wild medicinal plants (Anonymous, 2010). The biodiversity of the Indian Himalaya region is well known as an important source of traditional medicines since million of years and has been explored by people from across the world (Sharma et al., 2014a). Notable studies in respect of distribution and uses of ethnomedicinal plants in different parts of the state have been conducted by Arya et al. (2012) in Kangra; Sharma and Sood (2013) in Solan; Singh and Thakur (2014) in Shimla; Thakur et al. (2014) in Chamba; Rani et al. (2015) in Chamba, Kangra, Hamirpur and Mandi.

Kangra and Chamba districts of Himachal Pradesh are home to tribal communities such as Gaddis and Gujjars. These people are the guardians of indigenous traditional knowledge associated with their surrounding biological resources. They have been using these resources for various purposes in their daily life for a long time

(Sharma, 1998). The knowledge of use of medicinally important plants and practices is passed verbally from one generation to another and because of this tradition there is fear that indigenous knowledge about traditional medicine is slowly being lost (Ssegawa and Kasenene, 2007; Bhatia et al., 2014). Documentation of the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources. Documentation of such knowledge will lead to its conservation and facilitate future research on medicinal plant safety and efficacy to validate traditional use as well as prevent the destructive changes in the knowledge of medicinal plants during transmission between generations (Khoshbakt and Hammer, 2005; Bunalema et al., 2014). Therefore, the present investigation was aimed to collect information on the medicinal use of plants from tribal communities and traditional healers of North-Western Himalaya before it was lost.

2. Material and methods

2.1. Study area

The present investigation was carried out in Kangra and Chamba districts of the state Himachal Pradesh, India (Fig. 1). Kangra district is situated between 31° 40' to 32° 25' N latitude and 75° 35' to 76° 50' E longitude. The elevation varies from 500 to

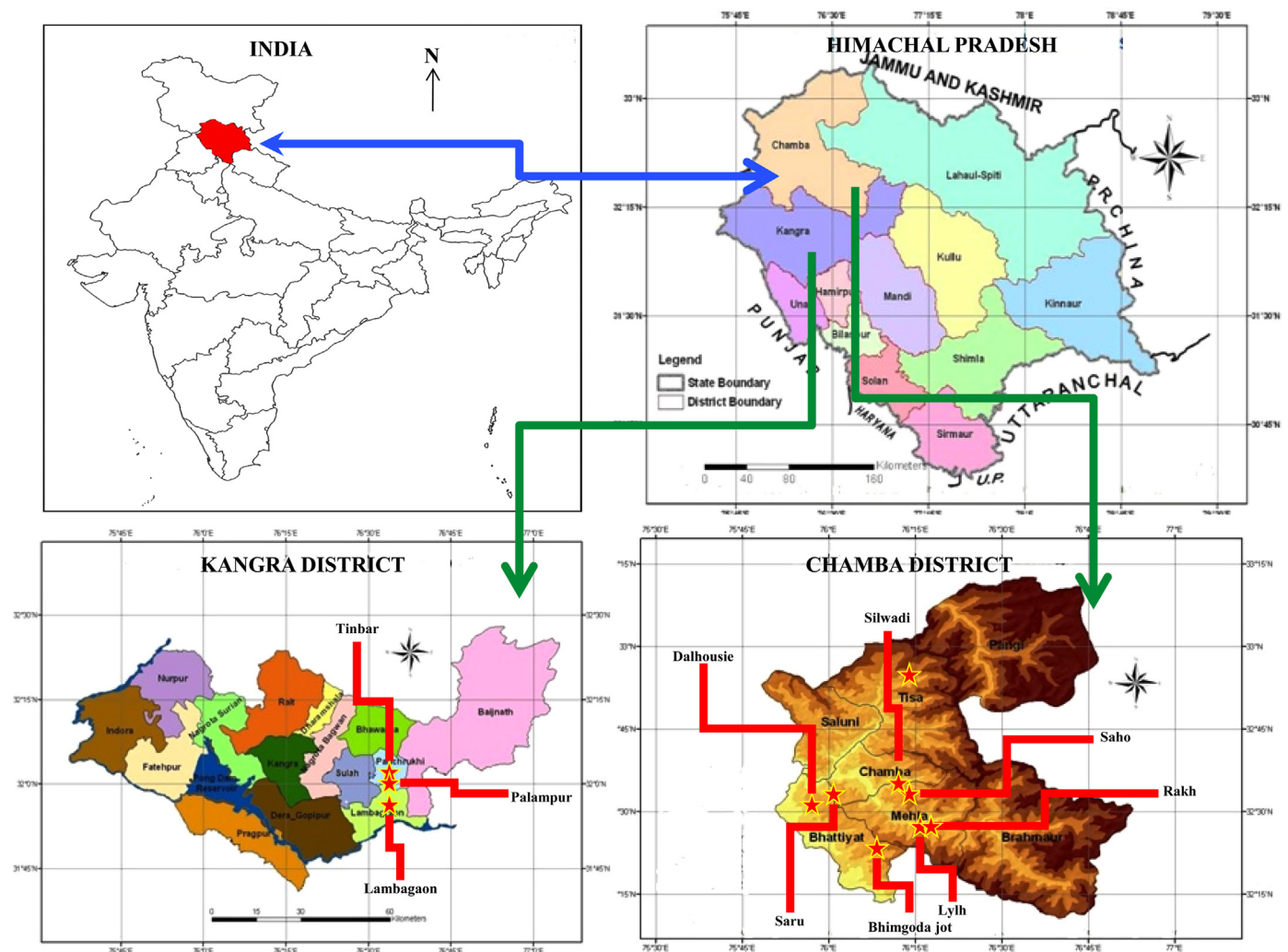


Fig. 1. Location map of Kangra and Chamba districts, Himachal Pradesh, India.

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