Plant Archives Vol. 20, Special Issue (AIAAS-2020), 2020 pp. 139-141 *ISSN 0972- 5210*

DOCUMENTATION OF COMMONLY USED WILD MEDICINAL PLANTS IN SHIKARI DEVI WILDLIFE SANCTUARY OF HIMACHAL PRADESH, INDIA

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Abstract

An ethnobotanical survey was done to collect the data on the practice of ethnomedicinal plant species in Shikari Devi Wildlife Sanctuary of Himachal Pradesh, India. The Sanctuary range has a very high quantity of endemic species and the social status of the ethnomedicinal plants in the communal thatis essential for public health and the preservation of traditional information. This study identified the ethnomedicinal plants presently used, recorded traditional information, and known patterns of diseases treated in the native individuals. A total of 23 commonly used ethnomedicinal plants belong to same or different familieswere described by native informants. Ethnomedicinal plant parts were used to treat several diseases, including snake bites, cough, cold, fever and infectious diseases etc. Informants reported that the most common plant part used was the leaves, and they also took the herbal remedies orally and topically which were the forms used to prepare these natural remedies. This ethnomedicinalstudy provides documentation of medicinal plant species used in the Shikari Devi Wildlife Sanctuary ofHimachal Pradesh in India. Local people were still reliant on ethnomedicinal plants, and in order to avoid their loss, certain measures for preservation of ethnomedicinal plants are needed.

Key words: Ethnobotany, Traditional uses, Medicinal plants and Sanctuary.

Introduction

The Indian Himalayan Region (IHR) ranging from Arunachal Pradesh to Himachal Pradesh, Uttarakhand and Jammu and Kashmir and rising up to an altitude of > 8000 m above mean sea level is one of the major sources of flora and fauna (Pant, 2005; Radha *et al.,* 2019a; Radha and Puri, 2019b). The rich plant diversity of Indian Himalayan Region (IHR) has been in use since the Vedic period. Due to its typical topography the IHR is an abode to unique habitats and biodiversity. It supports about 600 species of pteridophytes, 44 species of gymnosperms and 8000 species of angiosperms (Singh and Hajra, 1996). This rich vegetation of the Indian Himalayan Region has been used by the local people in varied forms as fodder, food, fuel, medicines, shelters and various other purposes. Of the entire vascular plant, 1748 species have been reported as medicinal (Samant *et al.,* 1998), 675 species as wild edibles (Samant and Dhar, 1997), 118 species of essential oil yielding medicinal plants, 155 species of sacred plants (Samant and Palni, 2000), 816 species of trees and 279 species of fodder plants. The state of Himachal Pradesh lies within the range of Indian Himalaya Region (IHR) embracing an entire geographical area of 55,673 Km^2. Being a part of Indian Himalayan Region, the state as well is gifted with rich biodiversity. Nearly 66.45% of its area is covered with forests and natural vegetation. The nativeindividuals of the villages mainlyreliant on the biodiversity for wild edibles, fuel, fodder, timber, medicines and various other uses (Samant, 1998; Samant and Pant, 2003; Samant *et al.,* 2007).

The local people of the villages are reliant on the medicinal plants available in the forests for the well-being. In the state of Himachal Pradesh, a large number of studies are presented on medicinal plants (Gaur and Singh, 1995; Chauhan, 1999; Sharma and Chauhan, 2004; Sharma *et al.,* 2004; Pandey *et al.,* 2016; Radha and Puri, 2019c; Radha and Puri, 2019d). Shikari Devi Wildlife Sanctuary was established in 1974 in Mandi district of Himachal Pradesh. It covers an area of about 3,065 ha. Altitude of this Sanctuary varies from 1800 to 3350 m above mean sea level whereas the climate ranges from temperate to alpine. The Sanctuary represents the vegetation of temperate to alpine climate and inhabitants of villages in and around the Sanctuary have got their rights pertaining to fuel wood, fodder, collection of timber, pine needles, grazing and various other forest products. In addition, graziers are permitted for grazing of their cattle inside the Sanctuary (Verma and Kapoor, 2019). The present study has been carried out to document the commonly used ethnomedicinal plants in Shikari Devi Wildlife Sanctuary of district Mandi in Himachal Pradesh.

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Material and Methods

Study area

The present study was carried out in Shikari Devi Wildlife Sanctuary (77°05'36" to 77°13'41"E and 31°27'03" to 31°32'16"N) of district Mandi in Himachal Pradesh, India. The Sanctuary represents the flora of temperate to alpine climate and local people of villages in and around the Sanctuary have got their rights for fuel, fodder, grazing, collection of timber, pine needles and various other forest products. In addition, graziers also get permits for grazing of their cattle inside the Sanctuary. It supports many numbers of wild edibles, medicinal, rare and endangered, wild relatives of crop plants, native and endemic species provides an ultimate habitat to wild animals. The local people of the peripheral villages are generally dependent on the rich biodiversity of the area for wild edible food, medicines, fuel, fodder, timber, fibre and essential oils etc (Bodh *et al*., 2018).

Data collection

For the documentation of ethnomedicinal plants used by local people of Shikari Devi Wildlife Sanctuary of district Mandi in Himachal Pradesh were surveyed during the year of 2019 to 2020. The information on wild medicinal plants used by local people of study area was collected by using pretested questionnaire, interviews, participatory observation and through discussion method. Total 73 informants were randomly selected for interviews. Only those ethnomedicinal plants were documented which were most frequently used by the local people of Sanctuary area for the treatment of different ailments. The specimens of ethnomedicinal plants being used by the local people of Sanctuary area were collected, dried and mounted on herbarium sheets, with labelled information describing from when and where they were collected. Vouchers of plant specimens were places in the herbarium of Shoolini University, Solan (Himachal Pradesh). Plants were identified with the help of experts from Botanical Survey of India, Dehradun, Uttarakhand.

Results

The present study documents the commonly usedethnomedicinal plants by native people of Shikari Devi Wildlife Sanctuary. Extensive field visits were carried out to complete this study. A total of commonly used 23 ethnomedicinal plants were used by native people. During the survey and interactions with the native people it was found that the knowledge on ethnomedicines was acquired by them through experience and from their elders. The medicinal plant species such as *Abies pindrow*, *Anaphalis triplinervis, Berberis aristata*, *Bidens pilosa*, *Cirsium wallichii, Cynodon dactylon*, *Delphinium vestitum, Euphorbia helioscopia, Hedera nepalensis, Impatiens sulcata, Leucas cephalotes, Leucodon secundus*, *Oxalis corniculata, Phytolacca acinosa, Pinus roxburghii, Polystichum setiferum, Prinsepia utilis, Prunella vulgaris*, *Quercus ilex, Rumex nepalensis, Urtica dioica, Verbascum thapsus* and *Viburnum grandiflorum w*ere commonly used.

The medicinal plant species *Abies pindrow* is used to treat Asthma and Ulcer; *Anaphalis triplinervis* is used to treat Snake bites; *Berberis aristata* is used to treat Inflammation and Wounds; *Bidens pilosa* is used to treat Cuts, Skin diseases, Snake bite, Sores, Wounds and Digestive problems; *Cirsium wallichii* is used to treat Toothache and Ulcers; *Cynodon dactylon* is used to treat Intestine complaints; *Delphinium vestitum* is used to treat Asthma and Acne; *Euphorbia helioscopia* is used to treat Dysentery and Skin problems; *Hedera nepalensis* is used to treat Bee sting and Insect bites; *Impatiens sulcata* is used to treat Snake bites; *Leucas cephalotes* is used to treat Diuretic; *Leucodon secundus* is used to treat Headache and Stomach ache; *Oxalis corniculata* is used to treat Cold, Cough and Jaundice; *Phytolacca acinosa* is used to treat Ear and Eyes infection; *Pinus roxburghii* is used to treat Fever, Eye diseases and Skin diseases; *Polystichum setiferum* is used to treat Fever; *Prinsepia utilis* is used to treat Sore throats; *Prunella vulgaris* is used to treat Dysentery and Skin problems; *Quercus ilex* is used to treat Dysentery and Skin problems; *Rumex nepalensis* is used to treat Swelling of muscles; *Urtica dioica* is used to treat Kidney stones and Skin diseases; *Verbascum thapsu*s is used to treat Typhoid and Cough and *Viburnum grandiflorum* is used to treat Cough, Fever and Lung diseases.

In all 23 plants documented for ethnomedicinal purposes belongs to same or different families were Pinaceae, Asteraceae, Berberidaceae, Poaceae, Ranunculaceae, Euphorbiaceae, Araliaceae, Balsaminaceae, Lamiaceae, Leucodontaceae, Oxalidaceae, Phytolaccaceae, Pinaceae, Dryopteridaceae, Rosaceae, Lamiaceae, Fagaceae, Polygonaceae, Urticaceae, Scrophulariaceae and Adoxaceae.

Discussion

Reserved source of the primary health centres, the old traditional knowledge of the ethnomedicinal plants and least side effect have resulted in the dependence of natives on the forest wealth.In addition, demand in national and international markets has increased the burden on certain highly preferred species; also high preference for various purposes has increased the pressure on these species. Though, these species show their availability, but continuous utilization may lead to declination in their number and availability. Utilization of whole plants, roots, fruits and seeds causes loss of species from the sanctuary area. Therefore, there is a vital need to establishment of species in *in-situ* and *ex-situ* conditions in participation with local communities and forest departmentand educate dependent communities on conservation and sustainable utilization of medicinal plants of the sanctuary area.

Conclusion

The collected information indicates that the study area is rich in ethnomedicinal plants, and the results contribute to spread their uses. The social importance of the ethnomedicinal plants in the community is quite important for the public health and the conservation of traditional knowledge, and good management is required. In Shikari Devi Wildlife Sanctuary the native population still depends upon medicinal plant species to treat several ailments. The plants used have a mostly native origin.

Acknowledgment

We would like to thank and acknowledge the local inhabitants of Shikari Devi Wildlife Sanctuary for sharing their traditional ethnomedicinal plant knowledge.

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