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## RESEARCH ARTICLE

### ETHNOBOTANICAL PLANTS OF BANDLI WILDLIFE SANCTUARY, MANDI, HIMACHAL PRADESH

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#### Abstract

Bandli Wildlife Sanctuary is located in Mandi district of Himachal Pradesh. This Protected Area is rich in plant diversity due vast altitudinal variation (600 – 2160 m) and geographical conditions. Present study was planned to collect information of plants used by inhabitants of this Wildlife Sanctuary. Field surveys were conducted during July 2012 to June 2014 on monthly basis to collect data on ethnobotanically important plants from villagers and traditional healers. A total of 104 plants species including 36 species of trees, 27 of shrubs, two of climbers and 39 species of herbs were documented. The plants were regularly used as fodder and forage, medicinal and religious purposes. Traditions, customs and cultural rights play a key role in protection of biodiversity and environment. Hence, there is a need to utilize the ethnobotanical information and promote the indigenous people as they contribute hugely in conserving the biodiversity.

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#### Introduction:-

Ethnobotany is the most important approach to study natural resource management of native peoples. It offers helpful clues for better use of natural resources to meet needs and to face the challenges of bio piracy and patenting native information by others. In our country, the tribal and rural folks largely depend upon local herbal resources to fulfill their daily requirements (Thakur et al., 2013). Therefore, present study is an attempt to investigate the wealth of indigenous information of this area and is expected to provide new dimensions for ever expanding pharmaceutical industry.

There is present rich wealth of information on the identity and division of various plant species of the region in the form of regional floras, reports of botanical expeditions, floras, genera and various other publications. A significant amount of work on ethnobotany of protected area have been made over different part of India as Parambikulam Wildlife Sanctuary (Yesodharan and Sujana, 2007), Sitamata Wildlife Sanctuary of Rajasthan (Meena et al., 2013) and Kanji Wildlife Sanctuary, Kargil (Hamid et al., 2014).

A number of reports are available on ethnobotanical plants of Himachal Pradesh. Chauhan (1974) mentioned use of *Ainsliea aptera* for curing acute gastritis by Gujjar, Gaddies and Vaidas residing in remote area of Himachal Pradesh. Rawat and Kharwal (2014) gave ethnobotanical detail on Shivalik hills of Himachal Pradesh. Such details are also available for different districts as Lahaul and Spiti (Singh et al., 2008), Mandi (Kumar, 2014) and Kinnaur (Singh and Batish, 2015).

Thakur et al. (2012, 2016) documented plant species diversity and biological spectrum of Bandli Wildlife Sanctuary. But there was no information available on ethnobotanically significant plants occurring at this Protected Area. Present report bridges this information gap by providing information on various ethnobotanical plants.

### Material and method:-

Present study was carried out at Bandli Wildlife Sanctuary of Mandi district in Himachal Pradesh and it is located between 31°25'21"-31°29'02" North latitude and 76°52'04"-76°56'54" East longitude. The sanctuary has a geographical expanse of 41.33 km<sup>2</sup> and experiences huge variation with respect to altitude (600 and 2162 m amsl). The average annual precipitation in this area is around 1,525 mm and temperature revolves between 1 °C to 35 °C. The general climate of Bandli Wildlife Sanctuary is composite with three broad distinct seasons i.e. summer, rainy and winter. Ethnobotanical important plant species were documented during ( July 2012 to June 2014) periodic field visits by interacting with and interviewing the village heads, traditional practitioners, women folk and elderly persons whose empirical knowledge were respected by most people.

### Results and Discussion:-

Bandli Wildlife Sanctuary is characterized by its natural beauty and unique culture, 104 species recorded from Sanctuary were of ethnobotanical importance. They included 36 species of trees, 27 of shrubs, two of climbers and 39 those of herbs. About 30.55 per cent tree species, 17.24 per cent shrub and climber species and 5.12 per cent herbaceous species were collected for consumption of their different parts. The use of many of these edible species has also been reported earlier (Monika et al., 2016) from various parts of Himachal Pradesh. About 52.77 per cent tree species served as fodder and forage for animals. In addition to this, 37.93 per cent species of shrubs and climbers, and 58.97 per cent herbaceous species were also valued as fodder plants. According to Sharma and Rana s(2016) fodder resources represent an integral part of rural people livelihoods in Himachal Pradesh. Like in majority of hill regions, people in and around the Sanctuary area were highly religious. They used plants in various religious festivals, worships and rituals. Such plants accounted for about 13.88 per cent trees and 3.44 per cent shrubs. Local ethnomedicinal prescriptions, which were used for treatment of various ailments, contained plants as their major components. About 50 per cent species of trees, 82.75 per cent species of shrubs and climbers and 71.79 per cent species of herbs were used in various herbal formulations by local people. According to Thakur et al. (2016) the state is well known for its rich ethnomedicinal heritage, and therapeutic plants extend a variety of healthcare services to the local communities (Table 1).

**Table 1:-** Percentage of ethnobotanical plants in Bandli Wildlife Sanctuary.

S. No.	Ethnobotanical Use(s)	No. of plant species (percent representation in study area)		
		Trees	Shrubs and climbers	Herbs
1	Fodder	19 (52.77)	11 (37.93)	23 (58.97)
2	Edible	11 (30.55)	5 (17.24)	2 (5.12)
3	Religious	5 (13.88)	1 (3.44)	0
4	Medicinal	18 (50)	24 (82.75)	28 (71.79)

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