

**Studies of biodiversity and Ethanobotanical Values of Medicinal Herbs at Dhamtari Forest
Range Chhattisgarh**

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ABSTRACT

Tribal belt of Dhamtari Chhattisgarh is dominant with medicinal plants by large numbers of tribal, rural and urban people. Several tribal communities like Kamar, Gond and Baigas inhabit in the area. Ethno botanical surveys had been carried out in forest patches of Sitanadi Wild life sanctuary, Dhamtari district Chhattisgarh from 2019-2020. The paper reports were documented of Ethanobotanical uses of 64 herb species out of which 15 valuable species are described here in which different parts of plants are used for different purposes for traditional medicine by people. Family wise distribution of medicinal plants shows Fabaceae is most dominant among the families. The drugs were found to be extracted from whole plant, root, rhizome, leaves, flower and seed of the plant. The aim of the present survey is to highlight that local people knowledge, role in resource management and focus on the diversity of ethnobotanical plants for future use and provide the framework to aware the people how to use plants to solve different type of problem.

Keywords- *Ethanobotany, medicinal plants, traditional, drugs, Dhamtari district*

INTRODUCTION

Documentation ethnobotanical studies and traditional knowledge is very essential for conservation and utilization of indigenous people's knowledge. Past few decades has witnessed an increased importance of ethnobotanical studies and its documentation. During this time considerable literature on ethnobotany has been published from different parts of the world. Ethnobotany comprises the study of not only medicinal plants but also include the study of food plants, fiber, dye and gum yielding plants, useful plants and harmful plants, taboos, avoidances, origins and even magico-religious beliefs of the tribal people about plants (Verma *et al*, 1985). The impact of traditional systems of medicine in the public health care system of India is substantially high and medicine is intimately interwoven with religiosity and ethnicity (Singh *et al*, 2021). The tribal communities have been using the plants for remedies to cure health for generations and they have strong belief in their own practices of using plants in medicinal formulations.

These herbal medicines are used after some kind of processing. Drugs such as quinine, digoxin, reserpine, artemisinin, D-tubocurarine, khellin, colchicines, emetin, cocaine etc. have been discovered in the plant-products that have important ethnomedicinal role. Medicinal plants/ plant parts such as seeds, barks, leaves, flowers, roots are harvested from the wild to prepare the herbal medicine. These herbs are being destroyed due to the continuous exploitation by human beings; at the same time their natural habitats have also been destroyed (Maheshwari, 2003).

The ultimate aim of ethnobotanical research is validation or invalidation of the tribal knowledge, practices and preparations. The forests are economically and environmentally very useful, thus, these are valuable natural resources. Urbanization, deforestation, industrialization, building construction, environmental pollution are the main causes of decline of medicinal plants. The increasing demand of herbal medicine in the market cannot be fulfilled if the deforestation continues (Pandey *et al*, 2015). At present about 95% of herbal medicine collection come from the forest. Plants are also nature treasure, if we use the

plant carefully and wisely, they will sustain otherwise they will extinct from the earth if overused. Today, in India the market of traditional medicine is unorganized.

Indian subcontinent represents a very rich wealth of diversified flora and fauna. Plant diversity assessment and documentation is the first step ahead before the next step of conservation of these biological resources. As per Heywood and Watson (1995) plant diversity documentation requires surveying, sorting, cataloguing and quantifying. Without documenting of these biodiversity there is a no means of conservation. Good biodiversity is always making the good environments which are helpful for people for many purposes. Biodiversity balances the food chain, food web, CO₂ sequestration, nutrient cycling and livelihood of human being (Jhariya and Raj, 2014). Myers et al. (2000) have identified 25 terrestrial biodiversity hot spot and also recognized 9 leading hot spots. The leading hot spot are richer in endemics than other hot spots. Forest is world's most valuable natural resource which is a store house of biological diversity.

The plant diversity of Dhamtari district with respect to its medicinal value is important in its natural condition and no data on complete angiosperms and their medicinal value has been published so far. Therefore, a complete up to date survey of district for documenting flora is required, because it keeps changing due to environmental factors and anthropogenic disturbances. Plants are on the verge of getting extinction on account of increasing anthropogenic activities. Therefore, medicinal data must be documented before species diversity is lost (Sapiens and Mehra, 2020).

MATERIALS AND METHODS

The present study was conducted during summer season during 2019-2020 in the Nagari and Dugali forest area in Chhattisgarh. These forest areas are 55 km far away from Dhamtari district of southern region of Chhattisgarh and situated between 20°42' N latitude and 81°33' longitude. It has an average elevation of 305 m above sea level. The climate of the area is tropical with temperature is ranging from 35.0 C to 12.40 C and annual rainfall is 1372.5 mm. The total area of forest is 8760 ha which is 2.14% of total geographical area of Dhamtari (408190 ha). The forest area topography is almost level (Forest Survey of India, 2009). The species were observed and identified with the help of local of villages in the forest area and forest guards. Quadrates of 10m x 10m for trees and 5m x 5m for shrubs were laid. The un- identified plants were collected and a herbarium sheet was prepared and identified with the help of local floras. Direct interviews were conducted and time was spent with those people to hoard information and also went to the forest to identify the plants in their wild habitat. The species were observed and identified one by one with the help of local villagers, tribal people, and selected informants (Shetty and Singh). The confirmation of the species is carried out with the help of various literature and 'medicinal flora of Madhya Pradesh and Chhattisgarh' (Jain et al., 2006) Finally, plants were documented by following their botanical name, family, habits, local name, parts use and uses of the individual plants.

RESULTS AND DISCUSSION

The present paper is focused on the ethnomedicinal utility of growing wild plants which was analyzed on the ground of data obtained through the local population. The results of this study are presented in Tables. In the table, plants are arranged in alphabetical order of their botanical names. For each species, the scientific name, local name, family, habit, parts used, and related traditional knowledge are presented. Medicinal use of analyzed plants is presented in Table 1, which gives an idea that these plants are used to heal many diseases from minor illnesses to some severe illnesses. Among identified 52 plants species 15 species came under medicinal herbs. About 12 plant species was edible. About 8 Gum yielding plant

species was identified. 8 Biocides (fungicidal, insecticidal and nematocidal) plant species was identified. From Kaliyari (*Gloriosa superba*) Colchicine is obtained from all parts of the plant but particularly the seeds, inhibits cell division and is used in plant breeding to produce polyploidy.

Table 1: Ethanomedicinal values of Herbs

S.No	Local Name	Botanical Name	Family	PartUsed	Ethanomedicinal value
1.	<i>Aloe barbadensis</i> Mill.	Ghrit-Kumari	Asphodelaceae	Wp	Useful in the treatment of skin diseases
2.	<i>Andrographis paniculata</i> (Burm.f.) Wall. Ex. Nees	Bhui-Neem OrChira yata	Acanthaceae	Wp	Useful in the treatment of cough, cold, headache, fever
3.	<i>Blumealacera</i> (Burm.f.) DC	Kukur-Matta	Asteraceae	Lf	Prevents blood flow from the wound
4.	<i>Boerhaviadiffusa</i> L.	Punar-Nawaa	Nyctaginaceae	Wp	Useful in the treatment of vomiting anddiarrhea and in curing stomach pain
5.	<i>Cleome viscosa</i> L.	Hul-Hul	Cleomaceae	Lf	Useful in fever and wound treatment.
6.	<i>Cynodondactylon</i> L. Pers.	Dub	Poaceae	St,Lf	It is useful in the treatment of hemorrhage and helps treat cephalalgia,

					urinary related diseases
7.	<i>Cyperus scariosus R. Br.</i>	Nagar-Motha	Cyperaceae	Rt	Useful in increasing
8.	<i>Euphorbia hirta L.</i>	Dudhi	Euphorbiaceae	Wp	Latex is used to unfasten thorns from bodyparts and can relieve baldness
9.	<i>Hemidesmus indicus (L.) R.Br.</i>	Anant-Mul	Apocynaceae	Rt	The fruit is used for the treatment of eye disease, dental diseases, and abortion
10.	<i>Mimosa pudica Linn</i>	Laajwanti	Fabaceae	Wp	Useful in the treatment of indigestion, hematochezia, cough and stones
11.	<i>Oxalis corniculata L.</i>	Tinpatiya	Oxalidaceae	Wp	It surges appetite. Used as a dentifrice
12.	<i>Phyllanthus amarus Schumach. &Thonn</i>	Bhui-aonla	Phyllanthaceae	Fr	Applying juice on the wound heals thewound

13.	<i>Solanum surattense</i> Burm.f.	Kanteri	Solanaceae	Fr	Useful in heart disease, eye disease treatment
14.	<i>Sphaeranthus indicus</i> L	Godhariya	Asteraceae	Wp	Useful in relieving
15.	<i>Tephrosia purpurea</i> (Linn.)Pers	Shatkh-pinkha	Fabaceae	Fr	Useful in curing

*Wp- whole plant, Lf- Leaf, St- stem, Rt- root, Fr- fruit

CONCLUSION

The paper is conveying comprehensive and collective information on diversity and local traditional medicinal knowledge of plants. The study revealed that local tribal communities depend upon plant-based primary treatment for common and severe disease such as wounds, cold, fever, cough, diarrhea, dysentery, skin disorders, etc. Among plants used in traditional medicine and remedies of the study area, a number were poly-functional. As data indicating there is extremely diverse flora of medicinal plants that need to be conserved with the help of local inhabiting tribes and people. Under the continuous botanical survey, many times such plants are collected which have very little left in that habitat, so during this survey, all the plants were identified in their natural habitat, and no plant was harmed in any way. Thus, it is the Authors first step towards the conservation of nature's gifts.

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