

Phyto-taxonomical analysis of Angiospermic species found In Satpura region of Harda district of Madhya Pradesh, India

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ABSTRACT

The present study is based on Phyto-taxonomical analysis of angiospermic species found In Satpura region of Harda district of Madhya Pradesh, India during the period of 2011-2016. It is selected because it has been given little attention of its vegetation. Present study records 902 wild and naturalized species of flowering plants which are distributed in 532 genera and 117 families. Dicotyledon represents 672 species, 397 genera and 95 families and monocotyledon represents 230 species, 135 genera and 22 families. The percentage of plant species in dicotyledons is 74.85 % and the monocotyledons represent 25.4 % but in the flora of world, the percentage of dicotyledons and monocotyledons are 81.3 % and 18.7 % respectively. The present quantitative checklist indicates the potential plant resources of the range which can be used for future biodiversity inventories and species conservation. The floristic information of Harda district of Madhya Pradesh is now available for the first time with this publication.

Key word: Harda, Biodiversity, conservation

INTRODUCTION

Floristic study is a necessary prerequisite for much fundamental research in tropical community ecology, such as modeling patterns of species diversity or understanding species distributions (Phillips *et al.* 2003). Forest is an important for biodiversity, environmental and ecological benefits, food security, soil conservation potential, and mitigation of the impact of climate change and job opportunity in tropics. Large scale of deforestation, human settlements, agricultural expansion, pollution, introduces invasive species, and other infrastructure related to development over the last century led to a rapid decline of tropical forests throughout the world, which in turn affected the biodiversity, climate change, ecological services, soil fauna, soil productivity and the livelihoods of forest dwelling as well as rural people. On the other hand, lack of technical and scientific infrastructure makes efforts of sustainable management of these natural resources extremely difficult. global biodiversity crisis has given rise to a growing concern at the prospect of a rapidly accelerating loss of species, population, domesticated varieties, medicinal herbs and natural habitats. The need of the hour is conservation

and sustainable use of biodiversity as an integral component of economic development.

The present study area Harda district is selected for the floristic studies because it has not been given attention its vegetation. Harda district is one of the unexplored districts of Madhya Pradesh, India and it is situated in eastern part of Madhya Pradesh. It lies on 21° 53' to 22° 36' longitude and 76° 47' to 77° 20' latitude. The area of the district is 2644.32 Sq. Km. of which forest covers 780.92 Sq. Km. Harda district is bounded by Sehore to the north, Hosangabad to the southeast, Khandwa to south and west and Dewas to northwest. The southern part of the district is covered by Satpura hill ranges and extended part of Malwa plateau. The soil of the area is black cotton soil and chiefly belong to ash of the Daccan trap. The river, Narmada is the sole river of this area. The knowledge of the plant community is a prerequisite to understand the overall structure and function of ecosystem. The floristic information of the flora of Harda district is now available for the first time with this publication.

MATERIAL AND METHODS

Intensive floristic survey has been carried out in different seasons from 2011-2016 by well-planned schedule. For plant collection and preservation of voucher specimen's standard methodology has been followed (Jain and Rao 1977). Voucher specimens were collected in polybag and identified in the laboratory with the help of flora (Hooker, 1892-1897; Cook, 1903; Gamble et al., 1915; Haines, 1921-1924; Duthie, 1960;

Verma et al., 1994; Mudgal et al., 1997; Singh et al., 2001; Khanna et al., 2001). Recent up-to-date nomenclature of ICBN was followed. Herbarium specimens were deposited in PMB Gujarati Science College, Indore. Analysis of the Phyto-taxonomical analysis of angiospermic species found In Satpura region of Harda district of Madhya Pradesh, India have been worked out on the basic data recorded during floristic studies of Harda district.

RESULTS & DISCUSSION

The investigation was carried out in order to explore the angiospermic species found In Satpura region of Harda district of Madhya Pradesh, India in Harda district of Madhya Pradesh, India during 2011-2016. The vegetation was arid to semiarid and dry deciduous, thorny scrub type. The Study revealed that the presence of some important shrubs and trees in the area. Present study records 902 wild and naturalized species of flowering plants which are distributed in 532 genera and 117 families (Table-1). Dicotyledon represents 672 species, 397 genera and 95 families and monocotyledon represent 230 species, 135 genera and 22 families. The percentage of plant species in dicotyledons is 74.85 % and the monocotyledons represent 25.4 % but in the flora of world, the percentage of dicotyledons and monocotyledons are 81.3 % and 18.7 % respectively. 145 exotic plant species have been recorded in Harda district which are distributed in 42 families of angiosperms. These are naturalized in study area which accounts 16 % of total flora Sainkhediya, (2016).

Table-1: Distribution of flowering plants

Category	Dicot		Monocots		Total
	No.	%	No.	%	
Family	95	81.1	22	18.8	117
Genera	397	74.3	135	25.5	532
Species	672	74.5	230	25.4	902

Table-2: Percentage of different growth forms

Life form	No. of species	Percentage (%)
Herbs	610	67.62
Shrubs	97	10.75
Trees	131	14.52
Climbers	64	7.09
TOTAL	902	99.98

Table-3: Number wise distribution of species within a genus

S. No.	No. of Genus	Total no. of Species	% of total
1.	1 Species × 382	382	42.35
2.	2 Species × 93	186	20.62
3.	3 Species × 18	54	5.98
4.	4 Species × 16	64	7.09
5.	5 Species × 6	30	3.32
6.	6 Species × 6	36	3.99
7.	7 Species × 2	14	1.55
8.	8 Species × 4	32	3.54
9.	9 Species × 1	9	0.99
10.	10 Species × 1	10	1.10
11.	11 Species × 1	11	1.21
12.	12 Species × 1	12	1.33
13.	62 Species × 1	62	6.87
14.	Total	902	99.94

Poaceae is dominant families of Harda along with 122 species. Different growth habit of a total 902 plant species are 610 herbs, 97 shrubs, 131 trees and 64 climbers. The present study reveals that *Cyperus* (20) is the most dominant genus. Percentage of different growth forms is shown in Table-2. Number wise distribution of species within a genus is shown in Table-3.

CONCLUSION

Vegetation is the most precious gift, nature has provided to us as meeting all kinds of essential requirements of the humans in the form of food, fodder, fuel, medicine, timber, resins, and oil, etc. Plant communities play a fundamental role in sustainable management by maintaining biodiversity and conserving the environment. Floristic studies acquire increasing importance in recent years in response to the need of developing and under developing countries to assess their plant wealth.

All the species are not equally important but there are only a few overtopping species which by their bulk and growth modify the habitat and control the growth of other species of the community as these species are called dominants. The immense variety of the climatic, edaphic and altitudinal variations in this region pay the way for a great range of ecological habitats for the harda district of M.P. It has poor forest cover but it has fairly rich biodiversity. A major constraint faced in assessing

threat status and ecological significance of rare, endangered and threatened species is lack of continuous monitoring over and over again in the previously explored areas or new areas often referred as unexplored areas. Thus, species once common remains common even though population becomes scarce or a rare species turns common as the forms of rarity are less understood (Sainkhediya & Ray 2012, Sainkhediya 2016). Understanding species biodiversity and phyto-taxonomical patterns is important for helping managers to evaluate the complexity and resources of these forests. In this view, an objective of this study was to analyze the patterns of species, for conservation though best management, so that expansion of the protected area network can be suggested.

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