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## **Preliminary survey of phyto-diversity in Guru Ghasidas National Park Baikunthpur district (Chhattisgarh), India**

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### **Abstract**

Phyto-diversity is the range of differences of variances along the same set of entities, thus refers to variety within the plant kingdom. In this article, I describe a phyto-diversity that serves as a framework for analyzing biodiversity of this area. Guru Ghasidas National Park is a famous tiger reserve in Chhattisgarh that is located in the eco region of the deciduous forests of Narmada Dry Region. Weather in Guru Ghasidas National Park is the best during winters and the national park experiences tropical climate throughout the year which means that the summers are quite hot with rising temperatures and monsoons are quite heavy as well. The best time to visit Guru Ghasidas National Park is during the winter time when temperatures drop down drastically and makes the climate absolutely cool and perfect to head out and explore the wildlife and plant life. An extensive and intensive plant survey was carried out from 2020 to 2021. preliminary study of Guru Ghasidas National Park shows rich plant diversity in respect to 44 families and 130 species along with 123 genera. Phytodiversity Guru Ghasidas National Park of Baikunthpur district of Chhattisgarh is very rich. Present study records a total of 130 Plants species which are distributed in 123 genera and 44 Families. Different life forms diversity is Herbs (80), Shrubs (13), Trees (24) and climbers (13). The outcome of this work will be valuable document for Botanist and taxonomical study and other researcher investigating in different fields.

**Keywords:** Phyto-diversity, Guru Ghasidas national park, biodiversity, Baikunthpur

### **Introduction**

Millions of species are grown in our planet. The biodiversity found on earth today consisting of many millions of distinct biological species which is the product of nearly 3.5 billion years of evolution and came into existence, flourished and vanished due to various reasons (Sainkhediya and Ray, 2014). Phyto-diversity of Guru Ghasidas National Park is represent the richness of varied life form. Baikunthpur district in Chhattisgarh is very rich in natural vegetation and biological wealth. The district lies between 22°58' to 23°49' North latitude and 81°33' to 82°45' East longitude. The average rainfall is 121.36 cm. The annual mean temperature is 24 °C. The temperature varied between 16.2 °C to 31 °C. Geologically, the area is dominated by upper Gondwana rocks which are rich in coal deposit. The highest mountain ranges of the region occupy the northern part of the district and have a forest area of 81.23%. The Guru Ghasidas Tiger Reserve is an extensive wooded forest smack on the boundary of Madhya Pradesh and Chhattisgarh states. With an area of 1440 sq km, the Guru Ghasidas National Park is one of the more important wildlife sanctuaries in central India and is located in Chhattisgarh.

### **Literature Survey**

It seems from above interpretation that although the district has rich vegetation but very little floristic work has been undertaken so far visited Kharkwal *et al.* (2005)<sup>[9]</sup>, Negi *et al.* (2005)<sup>[13]</sup>, Jain *et al.* (2011)<sup>[8]</sup>, Sinha and Sinha (2013)<sup>[15]</sup>, Tiwari and Tiwari (2014)<sup>[16]</sup>, Gaikwad *et al.* (2014)<sup>[4]</sup>, Bramhe (2015)<sup>[1]</sup>, and Gwalwanshi (2017)<sup>[5]</sup> and no consolidate efforts have been made to work out the diversity of the district as a whole. Keeping these points in view an assessment of phyto-diversity of Guru Ghasidas National Park block was done in 2020-2021 in the preparation of flora of the area an account of 130 taxa as a precursor to the area of Guru Ghasidas National Park of Baikunthpur district (C.G.), India has been dealt in the present paper.

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**Methodology**

Intensive and extensive plant survey was carried out during the year 2020-2021. Exploration work is done in each season. All habitats surveyed carefully. The vegetation and distribution pattern of the plants were studied. Plant collection and herbarium preparation is done by method suggested by Jain and Rao, 1977. Plant material is preserving mercuric chloride and alcohol and dried plant is mounted on herbarium sheet with the help of fevicol. Identification of plants done with the help of flora Hooker, (1892-1897) [7]; Cook, (1903) [2]; Hains, (1921-1924) [6]; Duthi, (1960) [3]; Shah, (1978) [14]; Verma *et al.*, (1993) [17]; Mudgal *et al.* (1997) [11]; Naik, (1998) [12]; Singh *et al.*, (2001) [15]; Khanna *et al.*, (2001) [10]; and other taxonomic literature. The entire plant specimen was deposited in herbarium of Deptt. of Botany, Govt. Naveen College Atal Nagar, New Raipur, Distt. Raipur (C.G.).

**Plan of work**

Guru Ghasidas National Park Baikunthpur district are selected because of thick population are presented and village wise study is conducted whereas the deep forest areas and these area are selected randomly. Plants related information is obtained and detailed discussion is note down on filed dairy. During the study villagers interviewed are arranges with senior persons who is aware about vegetation pattern of the area and diversity survey of different targeted sites of Guru Ghasidas National Park were selected. For this 25 filed trips are made and field's sites were frequently visited for diversity studies. The plant specimens are collected into different time and seasonal data are gathered and climatological data like temperature, humidity etc. recorded. Filed notes have been also noted in field dairy. Family's area arranges according to Hooker (1892-1893) [7] system of classification. Corrected author citation are given of listed texa is provided. Current nomenclature of ICBN is fallowed and botanical as well as families changed name advance classification of APG-IV has been followed.

**Result and Discussion**

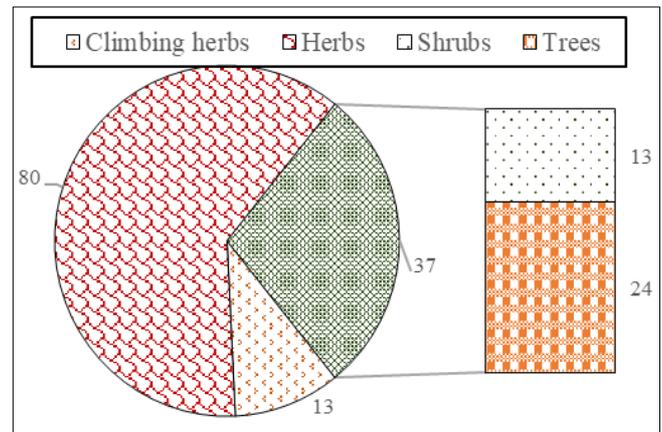
Present study reports 130 plant species which is distributed in 44 families 123 genera. Dicotyledons consist of 104 species with 100 genera and 36 families and monocotyledons consists 26 species, 23 genera and 8 families (Table-1). Our study reports 130 species and 123 genera which appear to be a good representation of the flora for a small region. Out of the 44 families 123 genera and 130 species monocotyledons share 8 families (15%), 23 genera (41%) and 26 species (44%) and Dicotyledons share 36 families (15%), 100 genera (42%) and 104 species (43%, Table-2 & fig.-1). Life form diversity is presented in figure - 2. The vegetation structure of the area is remarkably changing due to anthropogenic pressure and urbanization. The biodiversity of the world is reducing 10% due to eradiation. For this action and care should taking to conserve of taxa. Table-3 showed the Phyto-diversity of Guru Ghasidas National Park of Baikunthpur district.

**Table 1:** Distribution of taxa

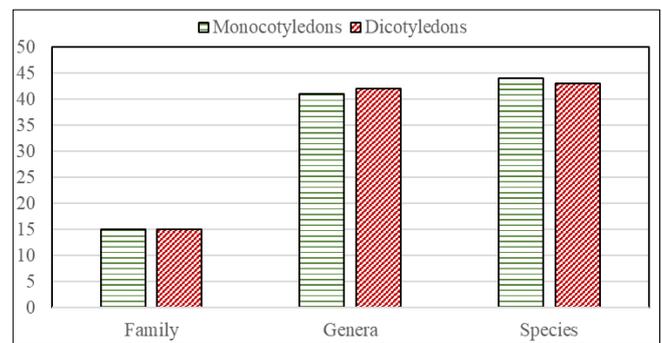
Angiosperm		Species	Genera	Families
Dicotyledons	Polypetalae	57	56	21
	Gamopetalae	38	36	11
	Monochlamydeae	9	8	4
	Total	104	100	36
Monocotyledons		26	23	8
	Grand Total	130	123	44

**Table 2:** Phyto-diversity in Guru Ghasidas National Park of Baikunthpur district

S. No.	Life forms	No. of species
1.	Climbing herbs	13
2.	Herbs	80
3.	Shrubs	13
4.	Trees	24



**Fig 1:** Life form in Guru Ghasidas National Park of Baikunthpur district



**Fig 2:** Distribution of taxa in Dicotyledons and monocotyledons

**Conclusion**

The present study assessment of phyto-diversity of Guru Ghasidas National Park of Baikunthpur district is first study in District which shows the importance of the area in terms of phyto-diversity. Species number is very high compared to others district flora of Chhattisgarh. It is only possible due to various habitats present with particular. Our study is recorded the phyto-diversity of different habitat here is the some glimpse of this region. In this area some texa are left unrecorded so it is need of hour to study long term comprehensive study to document.

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