

A Floristic Study of Kororia District (Chhattisgarh) India

Dr. Mantosh Kumar Sinha

* K.R. Technical College, Ambikapur (Chhattisgarh) India

Abstract- The State of Chhattisgarh has about 44% of its geographical Area Covered with forests. The Kororia district in Chhattisgarh lies between 22°58' to 23°49' North latitudes and 81° 33' to 82°45' East longitude. The average rainfall is 121.36 cm. The forest area is 81.23% of Total dist. area. The annual mean temperature is 24°C. The temperature varies 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.

Kororia District of Chhattisgarh state has a very rich flora exhibiting diversity of flowering plants. There is no comprehensive description of the flora as well as vascular cryptogams of the district. Some plant species are on the verge of extinction. Keeping these points in view, the present investigation was planned. Present paper deals with floristic account of flowering plants and provides a preliminary analysis of the flowering plants of Kororia district.

The district harbours 657 species under 439 genera and 119 families of Seed plants (Angiosperms). Of these, 364 species are wild and 293 species are cultivated/planted. D:M (Dicot:Monocot) ratio was found to be 6.00 family-wise, 4.85 genera-wise and 5.19 species-wise. Generic coefficient was found to be 66.81. The Genera:Species ratio was 1:1.496.

Index Terms- Chhattisgarh, Floristic study, Generic coefficient Kororia district

I. INTRODUCTION

India contains about 8% of world's biodiversity. Chhattisgarh, the 26th state of the country, has ample variation in physical and cultural features. It has about 44% of its total geographical area covered with forests. It enjoys hot and humid climate and gains rainfall from both north-east and south-west monsoon. It has about 30 small and big drainage systems. These features have an important contribution to its biological wealth.

Kororia district in Chhattisgarh lies between 22°58' and 23°51' North Latitude and 81°59' and 82°45' East Longitude and has a forest area of 81.23%. Average rainfall is 121.36 cm. and annual mean temperature is 24°C. The district is dominated by Upper Gondwana rocks which are rich in deposition of coal. The highest hill ranges occupy the northern part of Deogarh, Sonhat and Manendragarh.

The district has very rich in plant diversity, including medicinal plants. The flora of the district is not very comprehensively described. therefore There is an urgent need for the systematic enumeration, authentic identification and documentation of the flora of the district. Present paper deal with the floristic diversity of the Kororia district in Chhattisgarh.

II. RESULT AND DISCUSSION

Result in the Table -1 indicate the floristic analysis of the Kororia district. It shows a total of 119 families belonging to 102 dicot and 17 monocot angiosperms, Seven Gymnosperms and Nine Pteridophytes were also recorded. Ten most dominating families were Poaceae, Papilionaceae (Fabaceae), Asteraceae, Acanthaceae, Euphorbiaceae, Rubiaceae, Apocynaceae, Lamiaceae, Anacardiaceae, and Malvaceae.

The Dicot / Monocot ratio was 6.00 (family wise), 4.85 (genera wise) and 5.19 (species wise) The generic coefficient was found to be 66.81. The Genera : species ratio was 1:1.496. which is less as compared to previous report of Chipde (1980) who has reported 1:1.623 in case of flora of Bilaspur (Chhattisgarh).

Thakur *et al.* (2009) have reported Generic coefficient as 86.3% in forest vegetation of Sagar district in M.P. They have reported 31 dicot and 1 monocot families distributed in 63 genera and 73 species of trees.

Suresh *et al.* (2008) have enumerated 67 species from disturbed area of Thaniparai hills and 72 species from undisturbed area of Sundaramahalingan hills under Grizzled Giant squirrel wildlife sanctuary forest of Virudhunagar district. They have reported 51 families from the two sites with 125 genera and 139 species.

T.S. Nayar. *et al.* 2008 has also provided a preliminary analysis of flowering plants of Kerala based as 1303 publication appeared until 2008. They have stated that the state harbours 4694 species under 1418 genera and 188 families.

Silar Mohammad *et al.* (2008) have reported floristic diversity of Ahobilam forest in Andhara Pradesh.. They have collected a total of 250 wild and naturalized important plant species belonging to 71 families. These include many medicinal rare endemic and threatened categories of plants.

Awasthi *et al.* (2007) have also reported floristic diversity of Bandhavgarh national park, enumerating 47 plant species. Inamati *et al.* (2007) have reported 43 families represented by 130 spp. across four altitudinal zones in Devimane, (Western Ghats) Karnataka.

Ganeshiah *et al.* (2002) described a total of 178 families composed of 1408 genera and 4758 species in Karnataka. They have taken into consideration the major climatic zones of the state.

Uma Shankar (2001) described the floristic composition of tropical deciduous *Sal* forest in Darjeeling.

III. MATERIALS AND METHODS

The study was carried out during 2003 to 2007. The study encompasses an area of 20 km to 200 km radius around the Head Quarter town of the Korla district. The district comprises of 5 development blocks viz. :- Baikunthpur, Sonhat, Manendragarh Khadgawan, Bharatpur. The sampling sites were selected randomly. Some of them to quite are Shivpur, Katghodi, Pahadpara, Itga, Rakiya, Deori, Orgai, Amhar, Paradol, Sonari, Narayanpur, Kothari, Khongapani, Dubchhola, Boridand, Podi, Jilda, Bhagwanpur, Patwahi and, Semaria. The study includes an extensive and thorough field survey, data was analysed floristically. Dicot/Monocot ratio and generic coefficient was calculated following Jacord (1912) as under :-

$$\text{Generic Coefficient (G) \%} = \frac{\text{Total no. of genera}}{\text{Total no. of species}} \times 100$$

Ten most dominating families were also found .

IV. CONCLUSION

The result in the present study clearly show that the flora is very rich floristically which may be attributed to its varied topography and variation in climatic conditions.

REFERENCES

- [1] Awasthi, K.Ajay. Ashish, Dwivedi, K.K. Tripathi and Puspendra Singh (2007) Assessing floral diversity of Bandhavgarh National Park. phytosociological approach. *Jou. of Trop. Forestry* 23 .I & II: 63-76.

- [2] Chipde S.J. (1980) The Floristic study of Bilaspur and neighbouring areas in relation to Edaphic and Biotic factors .Ph. D. Thesis Ravishankar Shukla University, Raipur.
- [3] Ganeshaiiah, K.N. : Sagar Kathuria & R.Uma Shankar (2002) Floral resources of Karnataka : A. Geographical perspective *Current Sci*, 83.7: 810-813.
- [4] Inamati, S.K.,V. Devar and A.Krishna (2007) Floristic composition along altitudinal gradation in Devimane, Wester Ghats, Karnataka. *Indian forester* 133.5 : 679-689.
- [5] Jacord,P. (1912) The distribution of flora in the alpine zone *new phytol* 11 :37-50
- [6] Mishra, R.(1968) Ecology work book, oxford and IBH publication Co.New Delhi.
- [7] Mohammed, S.K. Basha & N.Praveen (2008) Floristic diversity of Ahobilam forest. *Current Sci*. 95.7 : 819:820.
- [8] Nayar,T.S.,M.Sibi,A.RasiyaBeegam,N.Mohanan and G.Rajkumar (2008) Flowering plants of kerala :Status and statistics.*Rheedea* 18.2:95-106
- [9] Suresh S.,N.Siva and K. Muthuchelian 2008 Plant species diversity at Grizzled Giant Squirrel wild life sanctuary in Western Ghats of Tamilnadu the India *J. Trop.Biodiversity* 16.2:125-134.
- [10] Thakur A.S.and P.K.Khare 2009 Composition of forest vegetation and floristic of Sagar district Central India *Jour. Indian.Bot.Society* 88.112:11-17
- [11] Umashankar 2001. A case of high tree diversity in a Sal (*Shorea robusta*) dominated low land forest of Eastern Himalaya : Floristic composition, regeneration and conservation *Current sci*. 81.7 : 776-786.

AUTHORS

First Author – Dr. Mantosh Kumar Sinha, K.R. Technical College, Pt. Shivdhari Colony, Near forest office,Pratappur Road, Ambikapur (Chhattisgarh) INDIA, E MAIL:- sinha.mantosh80@gmail.com, Phone no- 09691610059 , 07836232587

Table -1 Floristic Analysis of the Korla district (Chhattisgarh) India

DICOTYLEDONS:-

S.No.	Family	Wild		Cultivated	
		Genea	Species	Genera	Species
1	Ranunculaceae	01	01	01	02
2	Magnoliaceae	-	-	01	02
3	Annonaceae	02	03	01	02
4	Menispermaceae	02	02	-	-
5	Fumariaceae	01	01	01	01
6	Brassicaceae	01	01	02	04
7	Capparidaceae	03	05	-	-
8	Cleomaceae	-	-	01	02
9	Violaceae	-	-	01	01
10	Polygalaceae	-	-	01	01
11	Caryophyllaceae	-	-	01	01
12	Tamaricaceae	01	01	-	-
13	Elatinaceae	-	-	01	02
14	Malvaceae	06	06	02	05
15	Bombacaceae	01	01	01	02
16	Sterculiaceae	05	05	01	03

17	Tiliaceae	04	06	-	-
18	Linaceae	02	03	-	-
19	Zygophyllaceae	02	02	-	-
20	Oxalidaceae	01	01	-	-
21	Tropaeolaceae	-	-	01	01
22	Rutaceae	04	05	02	06
23	Simaroubaceae	01	01	-	-
24	Burseraceae	02	02	-	-
25	Meliaceae	05	05	-	-
26	Celastraceae	03	03	-	-
27	Rhamnaceae	02	04	-	-
29	Vitaceae	02	02	01	02
30	Sapindaceae	03	03	01	02
31	Anacardiaceae	06	06	03	04
32	Moringaceae	-	-	01	02
33	Papilionaceae	16	20	04	10
34	Caesalpinaceae	05	12	02	06
35	Mimosaceae	05	13	01	03
36	Rosaceae	-	-	03	05
37	Crassulaceae	01	01	01	02
38	Saxifragaceae	03	03	01	01
39	Droseraceae	-	-	01	02
40	Combretaceae	05	10	01	03
41	Myrtaceae	02	03	03	04
42	Lythraceae	03	03	-	-
43	Onagraceae	01	01	-	-
44	Trapaceae	-	-	01	02
45	Passifloraceae	01	01	02	03
46	Caricaceae	-	-	01	01
47	Cucurbitaceae	02	02	08	15
48	Cactaceae	01	01	01	02
49	Umbelliferae	01	01	02	04
50	Cornaceae	01	01	-	-
51	Rubiaceae	11	15	03	06
52	Asteraceae	11	13	05	13
53	Plumbaginaceae	01	02	01	03
54	Primulaceae	-	-	01	01
55	Sapotaceae	02	02	01	01
56	Ebenaceae	01	03	-	-
57	Oleaceae	01	01	01	04
58	Apocynaceae	09	13	04	10
59	Asclepiadaceae	07	07	03	04
60	Polemoniaceae	-	-	01	01
61	Convolvulaceae	05	06	02	03
62	Cuscutaceae	-	-	01	01
63	Solanaceae	02	03	06	10
64	Scrophulariaceae	02	02	03	04
65	Bignoniaceae	04	06	03	05
66	Pedaliaceae	02	02	01	01
67	Martyniaceae	-	-	01	01
68	Acanthaceae	11	12	05	09
69	Verbenaceae	07	09	04	06
70	Lamiaceae	07	10	04	09
71	Nyctaginaceae	02	02	02	07
72	Amaranthaceae	01	01	01	02
73	Chenopodiaceae	-	-	01	02
74	Polygonaceae	-	-	02	05

75	Aristolochiaceae	01	01	01	02
76	Proteaceae	01	01	-	-
77	Lauraceae	02	04	-	-
78	Loranthaceae	01	01	-	-
79	Euphorbiaceae	10	15	06	10
80	Ulmaceae	01	01	01	01
81	Cannabinaceae	01	02	01	02
82	Urticaceae	-	-	01	01
83	Moraceae	03	06	01	03
84	Casuarinaceae	-	-	01	01
85	Ampelidaceae	01	01	-	-
86	Berberidaceae	01	01	-	-
87	Bixaceae	03	03	01	02
88	Boraginaceae	02	02	-	-
89	Clusiaceae	01	01	-	-
90	Cochlospermaceae	01	01	-	-
91	Dilleniaceae	01	01	01	01
92	Dipterocarpaceae	01	01	-	-
93	Myriaceae	01	01	-	-
94	Myrsinaceae	02	02	01	02
95	Nyctanthaceae	01	01	01	01
96	Salicaceae	01	01	-	-
97	Salvadoraceae	01	01	01	02
98	Samydaceae	01	02	-	-
99	Santalaceae	01	01	-	01
100	Piperaceae	01	01	-	02
101	Styreceae	01	01	-	-
102	Thymelaeaceae	01	01	-	-

Monocotyledons:-

S.No.	Family	Wild		Cultivated	
		Genera	Species	Genera	Species
1	Hydrocharitaceae	-	-	01	01
2	Orchidaceae	03	04	-	-
3	Zingiberaceae	05	05	03	04
4	Cannanaceae	02	02	01	02
5	Musaceae	-	-	01	02
6	Hypoxidaceae	-	-	01	02
7	Amaryllidaceae	01	01	02	06
8	Dioscoreaceae	01	02	01	02
9	Liliaceae	06	08	02	06
10	Commelinaceae	01	02	01	01
11	Typhaceae	-	-	01	01
12	Arecaceae	01	02	02	02
13	Pandanaceae	01	01	01	02
14	Araceae	02	02	02	05
15	Potamogetonaceae	-	-	01	02
16	Cyperaceae	01	02	02	02
17	Poaceae	25	29	04	06

Total 284 364 155 293

D:M Ratio :- 6.00 (Family-wise) 4.85 (Genera-wise)
5.19 (Species wise)

Gymnosperm :-

S/no.	Family	Wild		Cultivated	
		Genera	Species	Genera	Species
1	Pinaceae	01	01	-	03
2	Cycadaceae	-	-	01	02
3	Ephedraceae	-	-	01	02
Total		01	01	02	07

Pteridophyta:-

S/no	Family	Wild		Cultivated	
		Genera	Species	Genera	Species
1	Adiantaceae	01	02	-	05
2	Dryopteridaceae	01	02	01	04
3	Martittiaceae	01	01	-	-
Total		03	05	01	09