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## Floristic composition of dry deciduous Chanda forest of Dindori district (M.P.)

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### Abstract

Floristic studies were conducted in Chanda forest. A total of 80 species belonging to 65 genera and 31 families of angiosperm were recorded during the sampling of vegetation. Based on species contribution Fabaceae, Asteraceae, Rubiaceae, Combretaceae, Malvaceae, Mimosaceae and Euphorbiaceae were found as dominant families.

**Keywords:** Floristic composition, chanda forest, Dindori district

### Introduction

Floristic richness of an area gives the design and functioning of the natural communities and also adds to complete understanding of the pattern and process of their structure. The floristic richness of an area depends upon the type, quality and stratification of its vegetation Whittaker (1972) [1]. Quantitative floristic inventories of forest ecosystems provides necessary context for understanding, planning and interpreting long-term ecological research (Phillips *et al.* 2003, Baithalu *et al.* 2013) [2-3]. The information resulting from forest inventories not only provides data on the floristic composition and abundance of individual species, but also on detailed structural attributes of the vegetation (Palomino & Alvarez 2009) [4]. The information also serves as an invaluable research base for diverse aspects of tropical ecology while providing information crucial for their conservation and management (Ayyappan & Parthasarthy 1999) [5].

Several workers have studied floristic composition of different regions in India (Meher-Homji 1964, 1981, Pandey & Parmar 1993, Sharman & Dhakre 1993, Singh & Arora 1994, Reddy *et al.* 1999, 2002, Jamir *et al.* 2006, Shukla & Mishra 2006, Patel *et al.* 2010, Thakur & Khare 2011, Bajpai *et al.* 2012, Thakur *et al.* 2012a, Thakur *et al.* 2012b, Ashwini *et al.* 2014, Chauhan *et al.* 2014, Mohammad & Joshi 2015 and Sundarapandian & Subbiah 2015) [6-23].

### Materials and Methods

Chanda forest range is expanded in eastern part of the Dindori district. It is 56 km. away from district headquarter and situated in Maikal hills at the side of Jabalpur-Amarkantak National highway. The height of the forest is 885 ft. minimum from msl and 1100 ft. maximum from msl.

In the east of Chanda forest, there is Karanjia range, in west & south. Samnapur range and in north Gadasarai range are situated. The Chanda Forest range has expanded between 22° to 22.50° North latitude and 81.15 to 81.20 longitude. The present study area has been divided into 3 sites *viz.* Chanda forest, Tantar forest, and Silpidi forest.

Forest communities were analysed by selecting uniform stands at study sites. Specimen of all species occurring in these plots belonging to trees, shrubs, herbs, climbers and epiphytes were collected and identified. These species provided a general floristic view of the vegetation. However, the collections are underestimate the floristics as the species occurring outside the sample plots were not considered. The generic coefficient of flora was calculated according to Jacord (1912) [24].

### Results and Discussion

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**Table 1:** Habit classification of plants observed at Chanda forest.

S. No.	Name of plant species	Family	Habit	Chanda forest
1.	<i>Acacia catechu</i> (L. f.) Willd.	Mimosaceae	Tree	+
2.	<i>Acacia leucophloea</i> Willd.	Mimosaceae	Tree	+
3.	<i>Achyranthes aspera</i> Linn.	Amranthaceae	Herb	+
4.	<i>Adina cordifolia</i> Hook. f.	Rubiaceae	Tree	+
5.	<i>Aegle marmelos</i> Correa.	Rutaceae	Tree	+
6.	<i>Ageratum conyzoides</i> Linn.	Asteraceae	Herb	+
7.	<i>Albizia lebbek</i> Benth.	Mimosaceae	Tree	+
8.	<i>Albizia odoratissima</i> (L. f.) Benth.	Mimosaceae	Tree	+
9.	<i>Alysicarpus monilifer</i> DC.	Fabaceae	Herb	+
10.	<i>Anogeissus latifolia</i> (Roxb. ex DC) Wall.	Combretaceae	Tree	+
11.	<i>Anogeissus pendula</i> Edgew.	Combretaceae	Tree/shrub	+
12.	<i>Barleria prionitis</i> Linn.	Acanthaceae	Herb	+
13.	<i>Bidens biternata</i> (Lour.) Merr. & Sherff.	Asteraceae	Herb	+
14.	<i>Biophytum sensitivum</i> DC.	Geraniaceae	Herb	+
15.	<i>Blepharis boerhaaviaefolia</i> Pers.	Acanthaceae	Herb	+
16.	<i>Boerhaavia diffusa</i> Linn.	Nyctaginaceae	Herb	+
17.	<i>Borreria stricta</i> Linn. F.	Rubiaceae	Herb	+
18.	<i>Boswellia serrata</i> Roxb. ex Colebr.	Burseraceae	Tree	+
19.	<i>Bridelia retusa</i> (L.) Spreng.	Euphorbiaceae	Tree	+
20.	<i>Buchanania lanzan</i> Spreng.	Anacardiaceae	Tree	+
21.	<i>Butea monosperma</i> (Lamk.) Taub.	Fabaceae	Tree	+
22.	<i>Carissa spinarum</i> Linn.	Apocynaceae	Shrub	+
23.	<i>Casearia graveolens</i> Dal.	Bixaceae	Tree	+
24.	<i>Cassia fistula</i> Linn.	Caesalpinaceae	Tree	+
25.	<i>Cassia pumila</i> Lamk.	Caesalpinaceae	Herb	+
26.	<i>Cassia tora</i> Linn.	Caesalpinaceae	Herb	+
27.	<i>Celosia argentea</i> Linn.	Amaranthaceae	Herb	+
28.	<i>Corchorus actangulus</i> Lam.	Tiliaceae	Herb	+
29.	<i>Cordia vestita</i> Hook. f. & Thoms.	Boraginaceae	Tree	+
30.	<i>Crotalaria prostrata</i> Roxb.	Fabaceae	Herb	+
31.	<i>Desmodium gangeticum</i> DC.	Fabaceae	Herb	+
32.	<i>Desmodium triflorum</i> DC.	Fabaceae	Herb	+
33.	<i>Diospyros melanoxylon</i> Roxb.	Ebenaceae	Tree	+
34.	<i>Ehretia laevis</i> Roxb.	Boraginaceae	Tree	+
35.	<i>Elaeodendron glaucum</i> Pers.	Celastraceae	Tree	+
36.	<i>Elephantopus scaber</i> Linn.	Asteraceae	Herb	+
37.	<i>Eragrostis pilosa</i>	Poaceae	Herb (Grass)	+
38.	<i>Erythrina variegata</i> L.	Fabaceae	Tree	+
39.	<i>Euphorbia hirta</i> Linn.	Euphorbiaceae	Herb	+
40.	<i>Flacourtia indica</i> (Burm. F.) Merr.	Bixaceae	Tree	+
41.	<i>Gardenia latifolia</i> Aiton.	Rubiaceae	Tree	+
42.	<i>Helicteres isora</i> Linn.	Sterculiaceae	Shrub	+
43.	<i>Hemidesmus indicus</i> (Linn.) Schultz	Asclepiadaceae	Climber	+
44.	<i>Hibiscus solandra</i> L. Herist.	Malvaceae	Herb	+
45.	<i>Holarrhena antidysentrica</i> Wall.	Apocynaceae	Shrub	+
46.	<i>Ipomaea coccinea</i> Linn.	Convolvulaceae	Climber	+
47.	<i>Iseilema antheophoroides</i> Hack.	Poaceae	Herb (Grass)	+
48.	<i>Justicia simplex</i> Don.	Acanthaceae	Herb	+
49.	<i>Kydia calycina</i> Roxb.	Malvaceae	Tree	+
50.	<i>Lagascea mollis</i> Cav.	Asteraceae	Herb	+
51.	<i>Lagerstroemia parviflora</i> Roxb.	Lythraceae	Tree	+
52.	<i>Lansea coromandelica</i> (Houtt.) Merr.	Anacardiaceae	Tree	+
53.	<i>Lantana camara</i> Linn.	Verbenaceae	Shrub	+
54.	<i>Loranthus longiflorus</i> Desr.	Proteaceae	Epiphyte	+
55.	<i>Madhuca indica</i> Gmel.	Sapotaceae	Tree	+
56.	<i>Malvastrum tricuspidatum</i> A. Grey.	Malvaceae	Herb	+
57.	<i>Milusa tomentosa</i> (Roxb.) J. Sinclair.	Annonaceae	Tree	+
58.	<i>Mitragyna parvifolia</i> (Roxb.) Korth.	Rubiaceae	Tree	+
59.	<i>Mitreola oldenlandioidea</i> Wall.	Loganiaceae	Herb	+
60.	<i>Ophismemus burmannii</i> (Retz.) P. Beauv.	Poaceae	Herb (Grass)	+
61.	<i>Ougeinia oojeinensis</i> (Roxb.) Hochr.	Fabaceae	Tree	+
62.	<i>Phyllanthus debilis</i> Ham.	Euphorbiaceae	Herb	+
63.	<i>Phyllanthus urinaria</i> Linn.	Euphorbiaceae	Herb	+
64.	<i>Randia spinosa</i> (Thumb.) Keay.	Rubiaceae	Shrub	+
65.	<i>Schleichera oleosa</i> (Lour.) Oken.	Sapindaceae	Tree	+
66.	<i>Sida spinosa</i> Linn.	Malvaceae	Herb	+
67.	<i>Sida veronicaefolia</i> Lamk.	Malvaceae	Herb	+
68.	<i>Sporobolus diander</i> (Retz.) P. Beauv.	Poaceae	Herb (Grass)	+

69.	<i>Tectona grandis</i> Linn.	Verbenaceae	Tree	+
70.	<i>Terminalia arjuna</i> W. & A.	Combretaceae	Tree	+
71.	<i>Terminalia bellerica</i> (Gaearth.) Roxb.	Combretaceae	Tree	+
72.	<i>Terminalia tomentosa</i> (DC.) W. & A.	Combretaceae	Tree	+
73.	<i>Tridax procumbens</i> Linn.	Asteraceae	Herb	+
74.	<i>Ventilago maderaspatana</i> Gaerth.	Rhamnaceae	Climber	+
75.	<i>Vernonia cinerea</i> Linn.	Asteraceae	Herb	+
76.	<i>Wendlandia puberula</i> DC.	Rubiaceae	Tree	+
77.	<i>Xanthium strumarium</i> Linn.	Asteraceae	Herb	+
78.	<i>Xylia xylocarpa</i> (Roxb.) Taub.	Fabaceae	Tree	+
79.	<i>Zizyphus oenoplia</i> Mill.	Rhamnaceae	Shrub	+
80.	<i>Zizyphus xylopyrus</i> Willd.	Rhamnaceae	Tree/Shrub	+

A total of 80 species belonging to 65 genera and 31 families of angiosperm were encountered during the sampling of vegetation (Table 1). Out of these total 34 tree species belongs to 30 genera; 06 shrubs species to 06 genera and 30 herbs species to 26 genera. Three climbers, Two tree/shrub, four herb (grass) and one of epiphyte species also recorded. The number of herb species is less than expected it is due to that only those species included in sampling that fell within the sampling unit and sampling was done after the rainy season when dry period began. The dicotyledons comprise 30 families 61genera and 76 species and monocotyledons

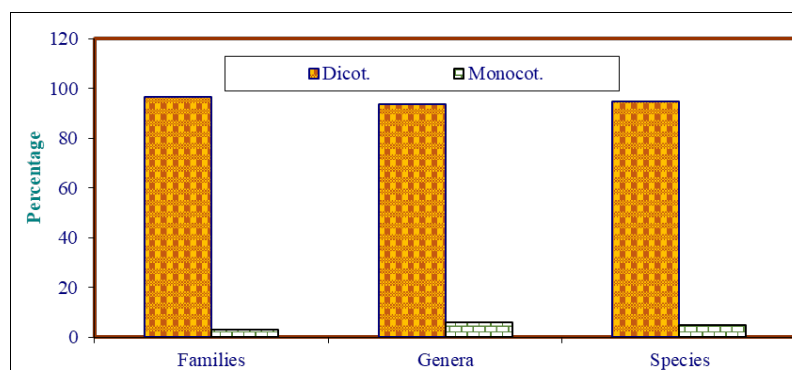
comprise 01 family 04 genera and 04 species. Out of the total 80 species dicotyledons represents 96.96% and monocotyledons 03.03%. The ratio of monocotyledons to dicotyledons family, genera and species were 1:03, 1:05 and 1:05 respectively (Table 2). Out of total 33 families of angiosperms in study area, the dominant families were Fabaceae (08 species), Asteraceae (07), Rubiaceae (06), Combretaceae (05), Malvaceae (05), Mimosaceae (04) and Euphorbiaceae (04) accounted for 39 (47.56%) species and 31 (43.05%) genera. Among the total families 17 families were monogeneric (Table 3).

**Table 2:** Comparative account of floristic composition of Chanda forest.

Category	Dicotyledons		Monocotyledons		Monocots to dicots ratio	Dicots to Monocots (%)	Total
	Number	%	Number	%			
Family	30	96.77	01	3.23	1:03	96.77	31
Genera	61	93.85	04	6.15	1:06	93.85	65
Species	76	95.00	04	5.00	1:05	95.00	80

**Table 3:** Arrangement of taxa of Chanda forest

S. No.	Family	Genera	Species	S. No.	Family	Genera	Species
<b>Dicotyledons</b>							
1.	Fabaceae	07	08	17	Annonaceae	01	01
2.	Asteraceae	07	07	18	Asclepidaceae	01	01
3.	Rubiaceae	06	06	19	Burseraceae	01	01
4.	Malvaceae	04	05	20	Celastraceae	01	01
5.	Euphorbiaceae	03	04	21	Ebenaceae	01	01
6.	Acanthaceae	03	03	22	Geraniaceae	01	01
7.	Combretaceae	02	05	23	Convolvulaceae	01	01
8.	Mimosaceae	02	04	24	Loganiaceae	01	01
9.	Rhamnaceae	02	03	25	Lythraceae	01	01
10.	Anacardiaceae	02	02	26	Nyctaginaceae	01	01
11.	Amaranthaceae	02	02	27	Proteaceae	01	01
12.	Apocynaceae	02	02	28	Rutaceae	01	01
13.	Bixaceae	02	02	29	Sapindaceae	01	01
14.	Boraginaceae	02	02	30	Sapotaceae	01	01
15.	Verbenaceae	02	02	31	Sterculiaceae	01	01
16.	Caesalpiaceae	01	03	32	Tiliaceae	01	01
<b>Monocotyledons</b>							
33.	Poaceae	04	04				



**Fig 1:** Percentage of families, genera and species

Present study area falls in a comparatively drier climate and most of the species shed their foliage during the winter season, render these forests naked. Comparative analysis of floristic composition with other studies done in Central India (Prasad & Pandey 1992, Thakur & Khare 2009) <sup>[25-26]</sup> envisaged that in this region floristic composition is poor. On the whole, it appears that long dry spell is perhaps the one of the major reason for the poor floristic structure.

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