

Study of Floristic Diversity of Chittorgarh Fort, Rajasthan (India)

Arun Chaudhary^{1*}, Sanju Balot²

Department of Botany Maharana Pratap Government P G College Chittorgarh

*Corresponding Author

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ABSTRACT

An assessment of floristic diversity was conducted at Chittorgarh Fort, to examine the floral diversity. The survey was carried out during the month of March 2026 and was focused on wild plant species rather than ornamental plant species which are found in huge amount in the temples, palaces, and historical museums and other places. Thus the main objective of this plant survey was to study only wild plants which can indicate the actual environmental condition and also can reflect the characteristic of vegetation found on Chittorgarh Fort. A total of 20 wild species belonging to 17 families was recorded from Chittorgarh fort, of which 45% belongs to tree, 30% shrub and 25% herb growth form.

Keywords: Floristic, Chittorgarh fort, Tree, Shrub and herb.

INTRODUCTION

The Mewar hills of Rajasthan have vast diversity of vegetation. It includes subtropical evergreen forests. In Rajasthan, the hilly topography in Aravali mountain ranges provides a wide variety of microhabitats which support rich biodiversity of plant species however, many tropical forests are under great anthropogenic pressure and require management Intervention to maintain the overall biodiversity, productivity and sustainability understanding species diversity and distribution patterns is important for helping managers evaluate the complexity and resource of the forests.

The tropical dry deciduous forests in Rajasthan have a dense layer of herbaceous vegetation during the rainy season which plays an important role in nutrient conservation and as a source of food for herbivores.

In Rajasthan and especially in Mewar has a unique natural region located on western part of the India, where distribution of plant species is actually limited. It is known to have unique floral biodiversity in the Asia. Floral composition of Rajasthan (S.K. Jain 1970) effort has been made to bring together all the available information, taking the state of Rajasthan as a whole. The total Angiosperm flora of Rajasthan comprise about 1280 species. Belonging to about 600 genera and 110 families.

Aravalli ranges, the oldest mountain ranges of world are main physiographic factor of the states. This ranges, diagonally divide the state into two distinct climatic regions. The area West of Aravalli is desert or semi desert, characterized by high wind velocity, high temperature, low relative humidity end thorny vegetation while the Area east of Aravalli shows considerable variations in temperature end rain fall distribution end possesses the tropical type of forest vegetation. The flora of Rajasthan has been attended by several workers Bhandari (1979), Sharma & Tiagi (1997) have worked out the flora of Western & North Eastern part of Rajasthan respectively. The present study was undertaken to study the floristic survey of Chittorgarh Fort, of Chittorgarh district. The main objectives of the survey are:

1. The field survey of Chittorgarh Fort and its adjoining area for the study of diversity of flowering plants.

2. The Collection of specimens and photography of the existing flowering plants.
3. The taxonomic characterization of the recorded flowering plants of the study area.

MATERIALS AND METHODES

The study was carried out from Fort of Chittorgarh, Rajasthan, India. The Chittorgarh fort seated on 180 meter hill covers an expanse of 700 acres (2.8 km square). Chittorgarh fort is the largest living fort in India and as well as in Asia. It was constructed by Mauryans in the 7th century. Chittorgarh is major city in Rajasthan state of western India. The city of Chittorgarh is located on the Bankes of river Gambhiri and Berach. Chittorgarh is located at 24.88° N 74.63° E it has an average elevation of 394 meters. Chittorgarh is the northwestern part of India. It lies in the southeastern part of Rajasthan state. The district encompasses 10,856 square km (3.17% of Rajasthan) area of land.

There are three distinct Season in a year; Winter- November to February, Summer- March to June and Rainy season- June to October.

The climate is tropical with a maximum of 43.3° Celsius and minimum of 28.8° Celsius during summers. The average annual rainfall is 61 centimeter occurring during June to September. The region is part of Aravalli hill system.

The study was based and conducted on Angiosperm flora of fort, Chittorgarh. The study was conducted on wild plant species rather than ornamental plant species which are found in huge amount in the temples, palaces, and historical museums and other places. Thus the main objective of this plant survey was to study only wild plants which can indicate the actual environmental condition and also can reflect the characteristic of vegetation found on Chittorgarh Fort.

In floristic survey, plants of different habitat were collected from various sites. Plant species were collected, documented and identified with the help of taxonomic literature. On the basis of present study collected plants were arranged according to their families, genera and species. Herbarium sheets of collected plants were prepared and it was preserved. A field label with all necessary data on the habitat has to be attached to each collected Plant, because the plant with no label has no scientific value. Field work is very important work in floristic survey. Valuable data were collected with the knowledgeable of local information on plant or plant parts used.

RESULT AND DISCUSSION

In this survey a total of 20 species belonging to 17 families, recorded from Chittorgarh fort. The details of which are as follows.

S.No.	Species name	Vernacular name	Family	Habit
1.	Anogeissus pendula	Dhauk	Combretaceae	Tree
2.	Solanum viriginianum	Bharangni, Dhaturi	Splanaceae	Herb
3.	Phoenix dactylifera	Date palm	Juncaceae	Tree
4.	Pachycereus schottii	Senita cactus	Cactaceaae	Shrub
5.	Bougainvillea glabra	Booganbel	Nyctaginaceae	Shrub
6.	Echinopes echinate	Oont-kateli	Asteraceae	Herb

7.	<i>Justicia adathoda</i>	Adusa	Acanthaceae	Shrub
8.	<i>Argemone mexicana</i>	Pili-kateli	Papaveraceae	Herb
9.	<i>Ziziphus nummularia</i>	Jhar-beri	Rhamnaceae	Shrub
10.	<i>Prosopis cineraria</i>	Khejri	Fabaceae (mimosaceae)	Tree
11.	<i>Holoptelea integrifolia</i>	Indian elm	Ulmaceae	Tree
12.	<i>Ficus benghalensis</i>	Bargad	Moraceae	Tree
13.	<i>Aloe vera</i>	Gheeganwar	Liliaceae	Herb
14.	<i>Cassia fistula</i>	Amaltas	Fabaceae (caesalpinaceae)	Tree
15.	<i>Trides procumbens</i>	-	Asteraceae	Herb
16.	<i>Butea monosperma</i>	Palash	Fabaceae (papilionaceae)	Tree
17.	<i>Calotropis procera</i>	Aakra	Ascleoiadaceae	Shrub
18.	<i>Azadirachta indica</i>	Neem	Meliaceae	Tree
19.	<i>Lantana camara</i>	Jermery	Verbenaceae	Shrub
20.	<i>Annona squamosa</i>	Sitaphal	Annonaceae	Tree

This study found 9 tree species, 6 shrubs and 5 herb species. As the study was conducted during mid-March month the perennial tree and shrub species are dominating, the grasses and annual herb are totally absent from this study. The Graphical representation of the survey represents the percentage distribution of flora in which 9 tree species contribute 45%, 6 shrub species contribute 30% and 5 herb species contribute 25% of whole survey.

After careful study, the present investigation recognizes that the fort angiospermic flora represents typical Aravalli system flora, which is proved by presence of *Anogeissus pendula*, the characteristic plant of Aravalli system. On fort deciduous angiospermic species are present. Presence of species from Cactaceae (*Pachycereus schottii*) and presence of *Aloe vera* from family Liliaceae on fort as well as on slopes of fort indicates water scarcity here.

However, several microclimates are present on fort of Chittorgarh. The microclimate provide different climate condition to plants which are different from macroclimate conditions of fort which are responsible for typical vegetation of Aravalli system. This type microclimate is present on Padan Pole and Rana Ratan Singh Palace where some bryophytes are found, there presence in such climate condition is only possible by microclimatic condition which are different from the macroclimate as previously stated. The fort is dominated by *Annona squamosa*.

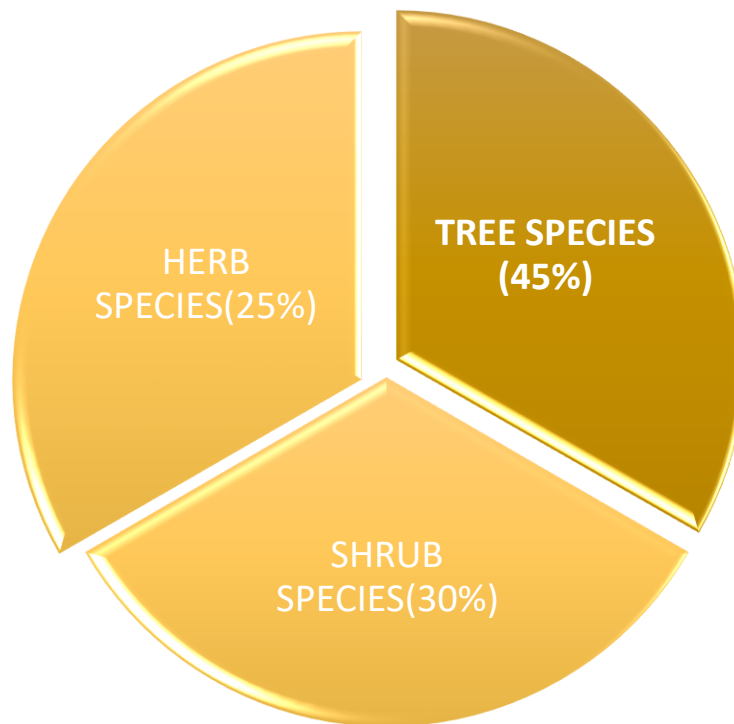


Figure 1: Graphical representation of percentage distribution of flora of fort Chittorgarh.



Argemone mexicana



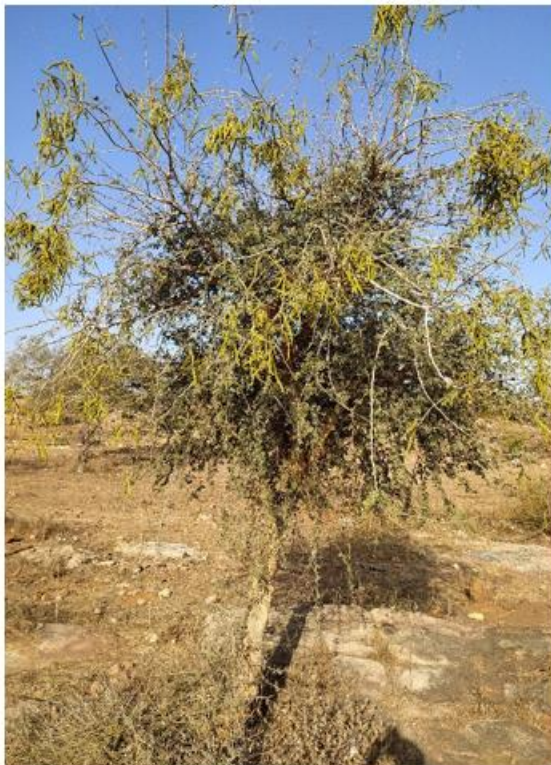
Azadirachta indica



Pachycereus schottii



Butea monosperma



Prosopis cineraria



Solanum xanthocarpum



Tridax procumbens



Ziziphus nummularia



Cassia fistula



Holoptelea integrifolia



Phoenix dactylifera



Ficus benghalensis

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