

Plant Diversity of Raoli-Todgarh Wildlife Sanctuary of Ajmer District (Rajasthan)



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Abstract

Raoli-Todgarh Wildlife Sanctuary is spread in about 495 km² across the districts of Ajmer, Rajsamand and Pali of Rajasthan. The maximum geographical area of the sanctuary falls in Ajmer and Rajsamand district. There are a variety of plants and animals in the Wildlife Sanctuary. Present investigation reflects important species of flowering plants. Most species are herbaceous in nature and few of them are climber & vines. Few of them are very important medicinal herbs and rest species are of ethnobotanical importance. Ever-increasing human population, human encroachments, global warming, overgrazing are main threats for the vegetation of the area. The Wildlife Sanctuary harbours a beautiful flora which needs instant measures for conservation. The conservation efforts should done at local communities & government level. About 29 plant species were explored from the area mostly belong to the angiosperms.

Keywords: Herbaceous Vegetation, Human Encroachment, Global Warming, Conservation Efforts, Ethnobotanical.

Introduction

Ajmer is located in middle Aravali Range in Rajasthan which extends from Khedbrahma, Palanpur (Gujrat) to Raisina Hills (New Delhi) extending in 16 Districts of Rajasthan. Its total length from Khedbrahma to Raisina Hills is 692 km from which 550 km (about 80%) extension is in Rajasthan from Udaipur/Sirohi in south-west direction to Alwar district in north-east direction Rajasthan. Average height of Aravali is 930 meters with highest peak 'Guru Shikhar' in Mt. Abu (Sirohi) District.

The Aravali is one of the oldest folded mountain range in India and located in Udaipur, Sirohi, Rajsamand, Ajmer, Jaipur, Sikar, Dausa, Alwar and cover about 9.3 percent area inhabited by 10% population of the state of Rajasthan. Aravali is a rough, rocky and hilly terrain and mostly inhabited by the tribes such as Bhills, Bhil-Meena, Meena, Garasia etc which are living in this area from the time immemorial.

Aravali is the remains of Gondvana landmass and is a residual mountain originated in Precambrian Era of geological past. Raoli-Todgarh Wildlife Sanctuary is located in the heartland of Aravali. The Wildlife Sanctuary harbours diverse flora which needs instant measures for conservation. The conservation efforts should done at local communities & government level. There are many important plant species of angiospermic stock which are medicinally and ethnobotanically important.

Review of Literature

Botanical explorations in Rajasthan were initiated by Jacquemont who was a naturalist visited Aravali during his journey from Delhi to Bombay via Ajmer and Neemuch. His work was published in his "Sketches of Ajmer Merwara" Later it was Sir George King published his paper "Sketch of Flora of Rajputana", (1878). Later Duthie's (1886) report on botanical tours in Rajputana were published, followed by Macadam who published "List of Plants of Mt. Abu" (1890). Many Floras were published following these works such as "Flora of upper gangetic plain, (including Rajputana) by Duthie (1929) and "Flora of Indian desert" by Bhandari M.M. (1978). "Flora of Rajasthan" Vol. I, II and III by B.V. Shetty and V. Singh, published by Botanical Survey of India in (1988).

In recent years detailed ecological studies on the vegetation of Rajasthan have been under taken by a number of workers such as "Life forms and Biological spectrum of the Vegetation of Nashirabad Valley, Ajmer District, Rajasthan" by Agarwal, Surbhi & Gena Dilip (2017), published in International Journal of Science and Research, "Spermatophytic Flora of Ajmer District, Rajasthan" by R. Harsh & Poonam

C. Tak published in International Journal of Allied Practice, Research & Review, (2018).

Aim of the Study

Vegetation of the Raoli-Todgarh Wildlife Sanctuary is dominated by the trees, shrubs, undershrubs and herbs. The current work attempt to explore the hilly tracts, vallies associated dry deciduous forests and grasslands. The main objective of the study was to make regular botanical tours and explorations to reveal current status of the plants and to find out vegetation structure and floristic composition of the area. The vegetation is dominated by twineers, undershrubs and herbs. The plant species are economically and medicinally very important.

Material and Methods

The investigation reveals flora of Raoli-Todgarh Wildlife Sanctuary and adjoining area, special emphasis is given to the rare plants and plants of medicinal importance.

Some places of the Raoli-Todgarh Wildlife Sanctuary were selected for the work. The sites were visited 4 times yearly during the rainy season in the years of 2014 to 2018.

Description of Botanical names, medicinal uses, family, ethnobotanical importance were documented from the reliable sources such as tribes living in the area.

The facts and information were further authenticated from different botanical literature such as 'Flora of Rajasthan' (Shetty B.V. and Singh V.) and 'Flora of Indian Desert.' (Bhandari M.M.)

Plant Diversity

Plant diversity of Raoli-Todgarh Wildlife Sanctuary is very important on the basis of its medicinal and economic value. The vegetation is dominated by dry deciduous forests. The dominant plants are trees and herbs of ethnomedicinal importance.

Table**List of Some Selected Plants of Raoli-Todgarh Wildlife Sanctuary with their Medicinal Importance**

S.N.	Botanical Name	Vernacular Name	Family	Plant Part Used	Ethanomedicinal Value
1	<i>Cardiospermum halicacabum</i>	Balloon vine	Sapindaceae	Fruit and leaves	Act against constipation. Used in Arthritis
2	<i>Dyerophytum indicum</i>	Chitavar	Plumbaginaceae	Bark paste	used against scorpion bites
3	<i>Sisamum mulianum</i>	wild sisame	Pedaliaceae	seeds	Cattle feed
4	<i>Dipacadi sp</i>	Jangli kanda	Liliaceae	whole plant	insecticidal properties.
5	<i>Urginea indica</i>	Bhakari-kondu/koli-kanda	Liliaceae	Root tuber	insecticidal properties. Rat killer
6	<i>Carysia carnosia infolia</i>	Jangali Angur bel	Vitaceae	Leaves	Insecticide
7	<i>Catharanthus pusilus</i>	Bavli buti	Apocyanaceae	plant extract	Hallucinogen causing plant
8	<i>Leucas urticifolia</i>	Panihari	Labiatae	whole plant	cattle feed
9	<i>Anisomelus indica</i>	Lalphuli	Labiatae	Stems	House making
10	<i>Ampelocissus Latifolia</i>	Panibel	vitaceae	Stems	House building
11	<i>Ocimum canum</i>	Bapji	Labiatae	Seeds & leaves	used to cure cough and cold
12	<i>Pedaliium murex</i>	Badi Gokhru	Pedaliaceae	Seeds	used to cure jaundice
13	<i>Rivea hypocreteriformis</i>	Nareli	Convolvulaceae	seeds	Cattle feed
14	<i>Evolvulus elsinoides</i>	vishnu kanta/blue shankh pushpi	Convolvulaceae	whole plant	used to cure Alzheimer and used as brain tonic
15	<i>Barlaria prionites</i>	Vazradanti	Acanthaceae	root powder	Tightens gums and teeth
16	<i>Andrographis echiniodes</i>	kulphat nath	Acanthaceae	plant extract	antidiabetic
17	<i>Abrus precatorius</i>	Rati chirmi	Fabaceae	Seeds	used traditionally as 'Ratti' (weight)
18	<i>Clitoria ternatea</i>	Aparajita blue pea	Fabaceae	Leaf extract	Used to cure Swellings & pain in piles.
19	<i>Ipomoea muricata</i>	Belri	Convolvulaceae	Stems and branches	Used for house building.
20	<i>Tinospora cordifolia</i>	Giloye vati	Menispermaceae	Stems Juice	Used as anti-viral in dengue.

21	<i>Pavonia odorata</i>	Sink	Malvaceae	Stem	Making Jhadus
22	<i>Tephrosia uniflora</i>	Bhakar Biyani	Fabaceae	Stems and branches	Used for making Jharu.
23	<i>Indigofera tinctoria</i>	Neel	Fabaceae	seeds	Source of 'indigo dye'
24	<i>Indigofera sessiliflora</i>	Chhoti Neel	Fabaceae	Stems	Used for house building.
25	<i>Crotolaria spectabilis</i>	Wild jute	Fabaceae	Whole plant	Cattle feed
26	<i>Crotolaria hebecarpa</i>	Wild jute	Fabaceae	Whole plant	Cattle feed
27	<i>Corallocarpus conocarpus</i>	Jangli Parval	Cucurbitaceae	fruits	cattle feed
28	<i>Corallocarpus epigaeus</i>	Jangli Parval	Cucurbitaceae	fruits	anti-diabetic
29	<i>Momordica balsamina</i>	Kakoda	Cucurbitaceae	fruits	Wild vegetable

Photo Plates*Barleria prionites**Tinospora cordifolia**Urginea indica**Crotolaria spectabilis**Catharanthus pusilus**Corallocarpus conocarpus*

*Andrographis echiniodes**Ocimum canum**Clitoria ternatea**Pedalium murex**Melothria madraspatana**Indigofera tinctoria***Results and Discussion**

Plant diversity of Roli-Todgarh Wildlife Sanctuary is ecological and economical importance. The plants include families of flowering plants such as; Sapindaceae, Plumbaginaceae, Pedalaceae, Liliaceae, Vitaceae, Apocynaceae, Labiatae, Convolvulaceae, Acanthaceae, Fabaceae, Menispermaceae, Cucurbitaceae etc. The vegetation is dominated by *Cardiospermum halicacabum*, *Dyerophytum indicum*, *Sisamum mulianum*, *Catharanthus pusilus*, *Anisomelus indica*, *Ocimum canum*, *Rivea hypocreteriformis*, *Evolvulus elsinoides*, *Andrographis echiniodes*, *Ipomoea muricata*, *Indigofera tinctoria*, *Crotalaria spectabilis* and *Corallocarpus epigaeus*.

Conclusion

The dominant families explored and identified are Pedalaceae, Vitaceae, Fabaceae, Convolvulaceae, Acanthaceae, Malvaceae, Cucurbitaceae. The most frequent plant species

include *Indigofera tinctoria*, *Crotalaria spectabilis*, *Crotalaria hebecarpa*, *Corallocarpus epigaeus*, *Tephrosia uniflora*.

The plant community is characterised by: *Cardiospermum* – *Carysia* – *Ampelocissus*, association and *Tephrosia* – *Sisamum* – *Indigofera*, association and *Dipcadi* – *Urginea* – *Catharanthus* – *Leucas*, association.

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