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Soil of Different Habitats in Ramgarh Vishdhari Wildlife Sanctuary, Bundi, Rajasthan: A Case Study

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Edaphic factor is important which influences the vegetation of angiospermic flora. Soil is one of the most important ecological factors. The texture and composition of soil play an important role in the luxuriant growth of the vegetation of a particular area. The type of vegetation of area is tropical dry deciduous. The present paper deals with study of soils of different habitats in Ramgarh Vishdhari wildlife sanctuary, Bundi, Rajasthan.

Key Words: Angiosperms, Deciduous, Edaphic factor, Forest blocks, Taxa

INTRODUCTION

Soil is the upper layer of earth in which plants grow. The study of soil is important in many respects. Soil is natural habitat for plants. Knowledge of it is also important from geological, mineralogical and floristic points of view. Edaphic factor is important which influences the vegetation of angiospermic flora. In order to present study soil types according to different physical regions and forest blocks of Ramgarh Vishdhari wildlife sanctuary have been taken into consideration.

STUDY AREA

Ramgarh Vishdhari wildlife sanctuary of Bundi district, is a part of Haroti plateau. It is a single compact and largeforest ecosystem in Haroti region. It lies in the south-eastern portion of Rajasthan between 24º 59’ 11’’ to 25º 53’ 11” North latitude and 75º 19’ 30” to 76 º 49’ 30” East longitudes. Different types of physical regions, elevation, topography, forests and soils makes interesting features of area.

RESEARCH METHODOLOGY

Important ecological and floristic studies of various part of India have been made by various authors (Mathur, 1960; Champion and Seth, 1968; Agarwal, 1971; Sharma, 1999; Sharma 2002; Yadav and Yadav 2008; Sikarwar, 2014; Dadhich, 2016; Sharma, 2020). In the present enumeration study of soil in different habitats have been accounted of the area. An ecological and floristic survey of the area was carried out during November 2013 to January 2015 and revised survey during January 2019 to November 2021.

RESULTS AND DISCUSSION

The texture and composition of soil play an important role in luxuriant growth of the vegetation of a particular area. The soil of Ramgarh Vishdhari wildlife sanctuary is varied in texture and composition. The soil is comparatively Black cotton, Red sandy, Sandy and Clay in colour and types. The texture of soil in general is Sandy loam to clay. The pH range was noted to be 6.25 to 8.28.

The soil of the area, in general can be divided into hilly, shallow, rocky areas and the soil of the plains. All over the forest areas of the sanctuary the soil is generally dry impoverished and deficient in humus on the slopes. These soils are light textured, shallow and covered with stone and boulders. The soil on the plateau areas of the sanctuary is sandy loam to loam, mixed with gravel and boulders and is reddish in colours. It is generally shallow. In depressions along the bank of 'nallahs' and in other low-lying areas, the soil is clayey loam to clayey and is fairly deep. This type of soil is favourable for the growth of peculiar angiospermic taxa. Table 1, reveals the types of soil in the area according to forest blocks.

TABLE – 1

Type of soil in the area according to Forest Blocks

		Types of Soil			
S. No.	Forest Block	Black Cotton Soil	Red Sandy Soil	Sandy Soil	Clay Soil
1	Shikar Burj	+	-	-	+
2	Bherupura	+	-	-	-
3	Jharpir	+	+	-	-
4	Vishdhari	+	+	+	-
5	Ramgarh	+	+	+	+
6	Pipliya Manak Chowk	+	+	+	+
7	Khatkar	+	+	+	-
8	Khatiyari Rajwas	-	+	-	-
9	Folai	-	+	+	-

Speed of water flow is determined by the steepness of slope. It affects soil characteristics and vegetation. Loss of water as runoff is more with increase in steepness of the slope. Two sides (one slopy and other plain side) of mountain inspite with similar annual rain fall bear different vegetation. Soil erosion is also related with the steepness of the slope. Ramgarh Vishdhari wildlife sanctuary area may be divided in to five physical regions. The types and important characteristic of the soil of study area according to the different physical regions are given in Table - 2.

TABLE: - 2

Type of soil in the area according to different physical regions

S. No.	Physical region (Habitat)	Soil types
1.	'Dang'	Foot hills, little sandy loam soil with clay depressions
2.	'Khoh', 'Stream' and 'Nallah'	Sandy, soil mixed with gravel and boulders, fairly deep
3.	Ravines	Sandy and erodible soil, poor soil
4.	Valleys	Sandy loam soil, with good depth and moisture
5.	Wet lands	Rich black loam and marshy soil

The tops of Vindhyan system known as 'Dang' have very shallow soil depth with little moisture after rains and have sparse vegetation. Valleys with good depth of soil and moisture support mixed forest of good growth and composition. In the ravines due to the poor soil, the main species are *Acacia leucophloea, Maytenus emarginatus, Balanites aegyptiaca* and *Clerodendrum phlomidis* etc. The under growth is *Zizyphus mauritiana, Zizyphus nummularia, Achyranthes aspera* and *Capparis decidua*.

CONCLUSION

Soil is one of the most important ecological factors. The soil types have an important role in the favourable growth and abundance of the vegetation of a particular area. The types of soil in the Ramgarh Vishdhari wildlife sanctuary according to various habitats and forest blocks have been described in this communication. The soil is comparatively fertile, brown or gray brown. At some area it is light reddish and black in colour.

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