

# Biological spectrum of Jamgad range forest, District Aravalli, North Gujarat, India

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**Abstract-** This paper deals with the study of Biological spectrum of Jamgad range forest district Aravalli North Gujarat. The present study enumerated 333 plant species, which belong to 202 genera and 70 families of angiosperms. Five life forms of different percentage were observed. The highest percentage (46.54) of Therophytes and less percentage of Hemicryptophytes (3.6). Hence, the area falls under the category of Therophytic types of phytoclimate, which indicates hot and dry climate in the region,

**Keywords-** Flora, biological spectrum, life forms, Jamgad range forest.

## I. INTRODUCTION

The increasing population trend over the last few decades and their consequent dependence on plant and bio-products has led to the vast exploitation of natural flora. Study of the floristic composition is objective of the present work; an attempt is made here to review some of the work done in the past on flora of Gujarat state. The flora and floral composition of Gujarat state has been studied in greater details by contributors like Cooke (1901- 1908), Kotiwar(1995),Vora and Patel(1981), Shah(1978), Santapau and Janardhan(1966), Yadav(1979), Pandit and Raviya(2003), Pandit *et al* (1996), Patel(2003), and several other workers in Gujarat have further added to our knowledge about flora and floristics of the state.

Some authors have also studied the biological spectrum for Gujarat state. Boergesen (1929) studied the vegetation of Dwarka in Saurashtra with reference of Raunkiaer's life forms. This work is followed by an account of the biological spectrum of the vegetation of Bhavnagar in Saurashtra (Murthy, 1957) Dangs (Shah and Yadav, 1979), Gujarat state (Shah *et al.* 1978 and 1983), Pandit *et al.* (2005) etc.

The Aravalli district is situated in the North West part of Gujarat between latitudes 20° 13' 15" and 24° 34' 30" North and longitudes 72° 47' 0" and 73° 37' 30" East. part of the western Aravalli. The Jamgad range forest is situated on latitudes 23° 30' 40" North and Longitudes 73° 30' 40" east. The total forest area 9722.08 hect. 4234.28 hect. is reserved forest and 5487.80 hect. is unclassified forest. The different part

of the Jamgad forest is hilly and elevation varies from 157 to 480 meters above the mean sea level. An attempt is now made to present biological spectrum is also compared with Barda Hills, Gir forest, Goghamaahal, Gujarat state, Saurashtra Region, South Gujarat.

## II. MATERIALS AND METHODS

Several field trips of duration ranging from 2 to 12 days were made at regular intervals to various parts of study area. The investigation based on the intensive and extensive field observation, collection and identification which were undertaken in different seasons for a period of two years and for the determination of life forms the methods of Raunkiaer's (1934) were employed.

## III. RESULT AND DISCUSSION

The present study enumerated 333 species, which belongs to 202 genera and 70 families of Angiosperms. Table 1 depicts biological spectrum of the present study. It shows the highest percentage (46.54) of Therophytes. Hence, the area falls under the category of therophytic type photo climate, which indicates hot and dry climate in the region, congenial for the growth of annuals and herbs.

**Table 1 :** Biological spectrum of Jamgad forest.

Life forms	Ph	Ch	H	Cv/G	Th
Normal spectrum(%)	46	9	26	6	13
Total species	114	39	12	13	155
% of species	34.23	11.71	3.6	3.9	46.54

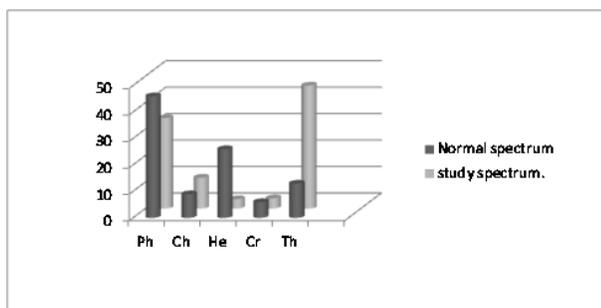


Fig. 1 : Comparison of Raunkiaer's life forms spectrum with present study.

Table 2 : Comparison of biological spectrum of Jamgadh forest with those in different forest of Gujarat.

Forest	Biological spectrum %					Phytoclimate
	Ph	Ch	H	Cr/G	Th	
Jamgadh forest (present study)	34.23	11.71	3.6	3.9	46.54	Therophytic
Barda Hills	41.18	5.13	7.07	7.61	40	Phenero-Therophytic
Gir forest	34.81	5.34	3.48	1.39	54.98	Therophytic
Goghamahal	6.72	6.30	8.82	4.20	49.58	Therophytic
Gujarat state	4.75	16.30	2.00	2.80	47.20	Therophytic

The comparison of the biological spectrum in the study area with those of different regions of Gujarat is given in table 2. It reveals that among all life forms, therophytes contribute the highest percentage in all the regions of Gujarat including the present study. The predominance of therophytes indicate warm climate. According to Bharucha and Dave (1944) the predominance of theophytes is influence of heavy grazing by live stock or biotic interference. Hower, Meher-Homji (1961) and Daubenmire (1968) attributed the occurrence of Therophytes to the aridity factor.

The higher percentage of therophytes and less percentage of phanerophytes and hemi cryptophytes in Megharj forest is due to deforestation, intensive utilization of land for cultivation and grazing by live stock. The result of present study is similar with the conclusions drawn by Meher-Homji (1971).

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