

Review Article

## A Review on Medicinal Plants Biodiversity of Vijayanagar Forest, Gujarat, India

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*Available Online: 17th June, 2017*

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### ABSTRACT

India is endowed with varying biogeography and physico-environment that encompasses a range of biodiversity with variation and endemism. Indian forests are characterised by human inhabitation from time immemorial. Gujarat situated at the western part of India is characterised by the assemblage of sea, lofty Aravallis, Vindhyas, Satpura range and Thar desert giving a rich diversity of species, habitat and ecosystems. These ecosystems despite its semi arid and arid climate encompasses unique and shelter some of the world's threatened species of plants and animals. They have rich fauna and diverse flora of medicinal herbs that are traditionally used by the healers. Vijayanagar Polo forest of Himmatnagar in Sabarkantha district is one of such area that contains fascinating flora and fauna. It is a dry deciduous forest with teak trees and various medicinal plants that are seasonal. This paper describes the scope of exploration of the forest for medicinal plants biodiversity in addition to the eco tourism that is practiced there for the rich fauna and flora of river side with most ancient historical sites.

**Keywords:** Medicinal plants, Biodiversity, Himmatnagar, Polo forest.

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### INTRODUCTION

Everyday life of human beings are highly dependent on plants growing naturally in every available places and cultivating for economic values. They grow naturally in every part of soil ranging from coastal areas to deserts. The habitat adds medicinal value to them in terms of secondary metabolites produced by them. These group called as angiosperms are autotrophs and highly adaptable to the varying ecosystem. These plants have taxonomic correlations and the flowering plants are numerous giving added value to the ecosystem and humans making them to explore for their medicinal values.

Gujarat is the western state of India situated between the latitudes of 20°01' N to 24°07'N and 68° 04'E to 74°04'E longitudes. It covers an area of 1,96,024 sq.km which accounts for nearly 6% of total geographic area of the country. The natural ecosystem of Gujarat is getting threatened by various climatic changes and anthropogenic activities. These threat affect the different ecosystems harbouring biodiversity. Increased human population have demanded more natural resources hence more exploitation on the natural resources leading to a considerable reduction in biodiversity. Humans interest on plants for food, fodder, fuel and fibre have made dependency on these rich natural resources. The state have a distinct geographical feature with the longest sea coast and four different mountain ranges.

The fragmented forest structure of the state with reserved, protected and unclassed forests extends over 19,941.34sqkm. The fragmentation leads to the broken

down association among ecosystems. Alien species are also found in these forests along with native and endemic species. Gujarat with its geographical phenomena of flat plains of the mainland extending from Daman in the south to Kutch and Abu in the north, the rocky peninsular Gujar covering Saurashtra and Kutch and highland region of north eastern Gujarat. Aravalli hills in the north upto Sabarmati river and Sabarkantha district in the east is the part of northern plain. The district with outliers of Aravalli mountains with its forests and rivers is a beautiful heritage expressing the ancient and glorious history of the region.

#### *Study area and observation*

Vijayanagar forests a part of fragmented forest of Gujarat with natural teak forests and Manvel bamboo on banks of harnav river, with seasonal ground cover. Pure patches of miscellaneous species could be found along stream banks. This dry deciduous scrub forest is known for their NTFPs (Mahua flowers and seeds, Timru leaves, Salai gums and medicinal plants). Known as Polo forests for the eco-tourism attracts numerous tourists and the important medicinal plants that are observed here includes

The use of herbals as natural resources by medical practitioners exhibits its importance in the ecosystem. The study of indigenous plants of Gujarat depicts its ethnomedicinal significance and use of them in diet system help to remain healthy<sup>1</sup>. Other authors<sup>2</sup> have also stated the importance of traditional knowledge and biodiversity of Gujarat. The HPLC and in silico analysis of herbals reveal their ability to be used in drug industry<sup>3,4</sup>. The utility of medicinal plants in large scale production exploits natural

Table 1: Medicinal plants observed in Vijayanagar forest.

S No	Family	Plant name
1.	Apocynaceae	<i>Alstonia scholaris</i> <i>Wrightia tomentosa</i>
2.	Caesalpiaceae	<i>Cassia fistula</i> <i>Cassia italic</i> <i>Cassia auriculata</i> <i>Macuna pruriens</i>
3.	Convolvulaceae	<i>Evolvulus alsinoides</i>
4.	Combretaceae	<i>Terminalia arjuna</i> <i>Terminalia bellirica</i> <i>Terminalia chebula</i>
5.	Fabaceae	<i>Abrus precatorious</i> <i>Acasia nilotica</i> <i>Caesalpinia crista</i> <i>Butea monosperma</i> <i>Saraca asoca</i>
6.	Leguminoceae	<i>Pongamia pinnata</i> <i>Psoralea corylifolia</i> <i>Pterocarpus marsupium</i> <i>Acasia catechu</i> <i>Tamarindus indica</i>
7.	Lythraceae	<i>Lawsonia inermis</i>
8.	Moraceae	<i>Ficus benghalensis</i> <i>Ficus racemosa</i> <i>Ficus religiosa</i>
9.	Myrtaceae	<i>Syzygium cumini</i>
10.	Nyctaginaceae	<i>Boerhavia diffusa</i>
11.	Pedaliaceae	<i>Pedaliium murex</i>
12.	Rutaceae	<i>Aegle marmelos</i>
13.	Sterculiaceae	<i>Sterculia urens</i>
14.	Solanaceae	<i>Datura metel</i> <i>Solanum surattense</i>
15.	Umbelliferae	<i>Centella asiatica</i>
16.	Verbenaceae	<i>Vitex negundo</i>

resources. The indiscriminate uses and climate changes are reducing the natural population of medicinal plants in their place of origin.

### CONCLUSION

There is vast fauna of medicinal and economic importance that are getting reduced in number and species. They should be identified and reported to create awareness about their significance in the natural ecosystem. These forests that act as a tourist attraction should also be able to develop a rich biodiversity for the future generations too.

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