



# **BIODIVERSITY OF TREE SPECIES WITH SPECIAL REFERENCE TO RARE, ENDANGERED AND THREATENED PLANTS SPECIES OF PADMALAYA FOREST REGION OF JALGAON DISTRICT(M.S.), INDIA**

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## **Abstract**

Padmalaya forest is one of the religious floristic regions among Satpuda forest ranges of Maharashtra, India. It is situated at the west of foothills of Satmala hills. An attempt has been made to document the rare, endangered and threatened tree species of Padmalaya forest area, which become helpful for the protection, management & conservation of biodiversity in general. In this work, attempt has been made to highlight some of threatened important tree plants species found growing still in the Padmalaya forest area found reported in the Red list of IUCN.

**Key words** : Trees, Padmalaya, rare, IUCN, threatened.

## **Introduction**

India is one of the 17 mega diverse countries in the world with four Biodiversity hotspots. The country consists of ca. 19294 flowering plants (Karthikeyan, 2000) out of which 2560 species have been estimated as trees (Rao, 1994).

Once upon a time, Padmalaya forest was considered to be the richest vegetation in Jalgaon district. It is ancient place having historical importance that, during Mahabharata, the 'Pandvas' made their settlement in this area because of rich forest vegetation for their protection. Today the forest has been destroyed almost, except few trees are in remainance. However, there are wild trees needs to be protected from the local pressure, habitat loss and climatic changes.

As per Biodiversity Acts 2002 & National Environment Policy 2005, floral & faunal diversities are the most important components of biodiversity they covers the variety & variations among species. So there is need to prepare the comprehensive lists of rare, endangered and threatened important medicinal plants & animal species region wise to know the exact status of biodiversity.

Now a day's Padmalaya forest occupies 6826.59 hectors of Reserve Forest as per the report of Forest Dept., Govt. of Maharashtra, India. As far as Padmalaya

forest concern there is neither report nor a literature on Biodiversity of Tree species is available. Therefore, it has been thought worthwhile to carry out the intensive studies on Tree plants species of the area.

According to IUCN an endangered species is a population of organisms, which is at risk of becoming extinct as they very few in numbers. Threatened species is related to referring as a species to likely to become endangered within future.

IUCN published online information of 41,500 endangered species worldwide in the form of Red List of Threatened species (1994-2007). In India work on threatened plants was first published by Botanical Survey of India by Jain and Shastry (1980) in the form of small booklet entitled threatened plants of India. Latter on Nayar and Shastry (1987, 1988, and 1990) published their comprehensive work about threatened plants of India in Red Data Book of Indian Plants by BSI (Nayar and Sastry, 1987, 1988 and 1990). Similarly, arid zone circle of Jodhpur BSI published a list of rare taxa of western region of Rajasthan (2008). Pandey (2012) also published a list of 65 taxa with their present status and conservation in Rajasthan.

Floristic diversity of Satpuda forest with special reference to Toranmal Dhule district was documented by Garud (1998) and Flora of Dhule district by Mathew

(1988) and recently floristic diversity of Nandurbar district by Valvi (2013).

Contribution to the flora & vegetation studies of Yaval Wild life Sanctuary of Satpuda ranges worked out by Salunkhe (1995), each of them showing documentation on dominant families & their species in their respective study area. Bagul (2002), first time worked out threat status of medicinal plants of Satpuda forest east in which he marked '55' medicinal plant species at risk.

In this work attempt has been made to highlight some of threatened important medicinal plants species found growing still in the Padmalaya forest area reported in the Red list of IUCN.

By this paper I urge to conserve & multiply this important National wealth of Padmalaya forest, which is having rich floristic diversity among the forest remains. There is need to declare this region as protected area.

### Materials and Methods

Present study was is based on the field work and literature survey from June 2016 to March 2017 deals with many plant species observed for floristic data. Rare, threatened & endangered plants were recorded from the Padmalaya forest region. During field survey various criteria of IUCN for categorizing threatened plants like Area of occupancy, Extent of occurrence, no. of individuals, probability of extinction etc, were measured. Rarity of species was determined by field study, visual

estimations & literature. During the course of collection it was found that some rare & endangered species were present in the study zone of Padmalaya forest which had found mentioned in the Red Data Book of Indian Medicinal plants, IUCN list of threatened plant species & in the list of BSI arid zone circle.

Extensive surveys of the area were conducted to prepare the list of plant species occurring in different seasons. During outgoing all the information collected were noted in field book. Pertinent attention was paid to habit, habitat, distribution pattern, diseases for which plants used dosages and mode of administration. As far as possible correct information were confirmed by repeated queries at different places. Specimens collected during the field work are processed for herbarium as per the customary methods suggested by Jain & Rao (1977). Specimens thoroughly studied for correct identification with the help of standard floras viz. Flora of Presidency of Bombay (Cook, 1957 Repr. ed.), Flora of British India (Hooker, 1872-1897), B.S.I. Flora of Maharashtra State, Vol. I, II & III (Edited by Sharma *et al*, 1996; Singh & Kartikeyan, 2000; Singh & Laksh, 2001). The identification was confirmed by authentically identified species at B.S.I. Pune. Herbarium sheets were neatly labeled and deposited in the herbarium of department of botany, A.S.C. College Chopda dist. Jalgaon, Maharashtra, India.

**Table 1 :** List of rare, endangered & threatened tree species of Padmalaya forest area.

S. no.	Botanical name	Local name	Family	Habit	Red data Book category	Present status in study/sps.no.
1.	<i>Acacia catechu</i> (L.F.) Willd	Khair	Mimosaceae	Tree	Invulnerable	LCRMB-70
2.	<i>Ailanthus excelsa</i> Roxb.	Varul	Simarubiaceae	Tree	Vulnerable	VURMB-23
3.	<i>Terminalia chebula</i> Retz.	Hirda	Combrataceae	Tree	Vulnerable	CRRMB-05
4.	<i>Alangium salvifolium</i> (L.F.) Wang	Gajnimbu	Alangiaceae	Tree	Rare	ENRMB-50
5.	<i>Anogeissus latifolia</i> (Roth ex. DC.) Wall. ex Guill & Perr	Dhavda	Combrataceae	Tree	Vulnerable	VURMB-46
6.	<i>Balanites aegyptiaca</i> (L.) Del.	Hinganbet	Balanitaceae	Tree	Invulnerable	ENRMB-24
7.	<i>Boswellia serrata</i> Roxb.	Sal	Bursaceae	Tree	Rare	LCRMB-21
8.	<i>Catunaregam spinosa</i> (Thunb.)	Mindhol	Rubiaceae	Tree	Rare	CRRSV-20
9.	<i>Erythrina variegata</i> L.	Pangara	Fabaceae	Tree	Vulnerable	ENRMB-43
10.	<i>Cordia dichotoma</i> Frost.	Bhokar	Ehrateaceae	Tree	Vulnerable	ENRMB-39
11.	<i>Dolichandrone falcata</i> (Wall ex DC.)	Medhsing	Bignoniaceae	Tree	Invulnerable	NTRMB-60
12.	<i>Dalburgia volubilis</i> Roxb.	Shisam	Ceasalpiniaceae	Tree	Invulnerable	VNRMB-11
13.	<i>Delonix elata</i> (L.) Gamble	Sansada	Ceasalpiniaceae	Tree	Invulnerable	VNRMB-110

Table 1 continued....

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14.	<i>Sterculia urens</i> Roxb	Karai/Kadai	Sterculiaceae	Tree	Invulnerable	CRRMB -153
15.	<i>Feronia limonia</i> l	Kaith	Rutaceae	Tree	Invulnerable	ENRMB -170
16.	<i>Gmelina arborea</i> Roxb	Shivam	Verbinaceae	Tree	Endangered	EWRMB - 182
17.	<i>Morinda pubescens</i> Sm	Bartondi	Rubiaceae	Tree	Vulnerable	NTRMB -56
18.	<i>Nyctanthus arbor-tristis</i> L	Parijat	Oliaceae	Tree	Vulnerable	LCRMB -78
19.	<i>Terminalia belerica</i> Gaertn	Behda	Combrataceae	Tree	Invulnerable	ENRMB -119
20.	<i>Wrightia tinctoria</i> R.Br	Kudi	Apocynaceae	Tree	Invulnerable	LCRMB -43
21.	<i>Srychnos portatorum</i> L.F.	Nirmali	Longaniaceae	Tree	Vulnerable	CERMB - 28
22.	<i>Butea monosperma</i> (Lam.) Taub.	Palas	Fabaceae	Tree	Vulnerable	VURMB -35
23.	<i>Holoptelia integrifolia</i>	Papad	Ulmaceae	Tree	Vulnerable	VURMB -87
24.	<i>Prosopis cineraria</i> (L.) Druce	Sondad	Mimosaceae	Tree	Vulnerable	VURMB -97
25.	<i>Parkinsonia aculeata</i> L.	Vedibabhul	Caesalpiniaceae	Tree	Vulnerable	VURMB -146

## Results and Discussion

Taxonomic surveys were conducted in the tracks of Padmalaya forest only where 75 taxa including angiosperms, were documented. Total no of tree species studied 75, no. of tree species reported with present threat status & reported in the list of IUCN are “25” are used for medicines. The common diseases based on uses of medicinal plants are skin diseases, stomache, rheumatism, diarrhea, sexual diseases, cough, jaundice, fever, leucorrhoea, indigestion, urinary complaints and piles. This result is very much similar to medicinal plants study worked out by RMB, in 2002. Plant species with ten dominant families are Fabaceae, Bignoniaceae, Euphorbiaceae, Mimosaceae, Malvaceae, Rubiaceae, Ceasalpiniaceae, Acanthaceae, Apocynaceae & Combrataceae. 25 plant species have been documented as threatened, rare & endangered belonging to 18 families enumerated with their local names, present status, and red data book category in the study area. Plants arranged as per the classification of threatened plants given by IUCN.

## Acknowledgement

Author thanks to BCUD, North Maharashtra University, Jalgaon for financial assistance.& Forest Dept. Jalgaon for providing valuable information.

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