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MEDICINAL PLANT RESOURCES AND CONSERVATION IN GUNDLABRAHMESWARAM WILD LIFE SANCTUARY

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Plants have been used as traditional medicine for several thousands of years. Gundlabrahmeswaram is the nucleus of Nallamalais appearing as plateau. GBM wild life sanctuary is experiencing heavy biotic interference in terms of over-exploitation, unscientific extraction of medicinal plant resources. For this reason many plant taxa are being threatened. This paper deals with to analyse threatened taxa, and to propose stratigies for the effective conservation of medicinal plant resources and save biodiversity.

Keywords : Biotic interference; Conservation; Medicinal plants.

Plants which are fundamental to almost all life on earth. They provide food, shelter and medicine to mankind. Plants curing ailments are known to mankind since time immemorial. It is estimated. at least 8000 species of medicinal value are encountered in Indian habitats. Medicinal plants grow naturally around us. Over centuries, cultures around the world have learned how to use plants to fight illness and maintain health. Increasingly, medicinal species that reside in natural areas have received scientific and commercial attention. Increased demand resulted deforestation of the Jungles. As a result many medicinal plant species have become threatened and on the verge of extinction. It has become pandemic phenomenon. GBM Wild Life Sanctuary in one of the biggest tiger protected sanctuaries in India, which is situated in Central Nallamalais of Southern Eastern Ghats of Andhra Pradesh. GBM Wild life sanctuary spread over an area of 1,194sq.km, covering Kurnool and Prakasam district. It is bounded by Rajiv Gandhi Tiger Reserve on the north, NandiKanama on south, Velugode, Nandyal and Mahanandi on the west, while Markapuram and Dornal in the eastern side. GBM spread between 15^{0}40' N-15^{0}89' N and 78^{0}06'E-78^{0}09'E. The area floaded with different floristic and variety of fauna spices. The GBM Wild life sanctuary is divided into 4 forest divisions Nandyal, Atmakur, Markapuram and Giddalur divisions. GundlaKamma, Rollavagu, Pengidivagu, Thungaluru are the main water resources to the area. Climate of the sanctuary is hot in summer from March to June, South west monsoon starts in the later half of June, reaches to climax in July, August and September, North-east monsoon in October and November. December and January are the coldest months of the year. The maximum temperature is 45^{0}C in summer while the minimum 10^{0}C in winter at higher altitude. The GBM receive an annual rainfall about 127cm. Vegetation of GBM is mainly divided into dry deciduous and moist deciduous. The ethnic groups of the area the chenchus, the sugalis and yanadis.

The present paper focuses on medicinal plant resources in GBM and assessing their conservation status on the basis of field observation, density and distribution, we also interacted with the local tribal people to document the information about the medicinal values of the various plant species growing in GBM area.

Methodology : Inventory of medicinal plants was prepared, from different localities of GBM area over a period of 2 years with the help of local tribal communities, documented the data, medicinal uses[1-3], marketing values, and conversation aspects. Identification of taxa was done with the help of authentic floras[4-9]. Herbaria prepared[10,11] and study was done on threatened plant species based on literature and on field observation.

A total of 485 taxa of vascular plants with medicinal value were recorded. The largest family of medicinal plants interms of number of genera and species in GBM is Fabaceae with 36 species, followed by Euphorbiaceae 32 species, Asclepiadaceae 19, Rubiaceae 18 species. All the taxa recorded from the GBM area were, evaluated for their threatened status at Andhra Pradesh State Level following Rao *et al.*[12], and the recent IUCN version 3.1[13], A total of 21 taxa (Table 1) given different threat status as indicated. Based on the field studies apart from the listed 21 taxa, 22 other medicinal plant taxa (Table 2) encountered in GBM, considered threatened due to

Table 1. Threatened medicinal plants.

S.No	Species Name	Status	Source
1	*Aegle marmelos*	VU	Jadhav *et al.*, 2001
2	*Amorphophallus Sylvaticus*	VU	Jadhav *et al.*, 2001
3	*Boswellia ovalifoliolata*	EN	Jadhav *et al.*, 2001
4	*Boswellia ovalifoliolata*	Intermediate	Rao *et al.*, 2003
5	*Celastrus paniculatus*	NT	Jadhav *et al.*, 2001
6	*Costus speciosus*	NT	Jadhav *et al.*, 2001
7	*Decalepis hamiltonii*	EN	Jadhav *et al.*, 2001
8	*Enteda pursaetha*	EN	Jadhav *et al.*, 2001
9	*Gloriosa superba*	VU	Jadhav *et al.*, 2001
10	*Gymnema sylvestre*	VU	Jadhav *et al.*, 2001
11	*Holostemma ade-kodien*	NT	Jadhav *et al.*, 2001
12	*Oroxylum indicum*	VU	Jadhav *et al.*, 2001
13	*Plectranthus barbatus*	EN	Jadhav *et al.*, 2001
14	*Pterocarpus santalinus*	EN	Rao *et al.*, 2003
15	*Pterocarpus santalinus*	EN	Jadhav *et al.*, 2001
16	*Pueraria tuberosa*	NT	Jadhav *et al.*, 2001
17	*Rauvolfia serpentina*	CR	Jadhav *et al.*, 2001
18	*Santalum album*	EN	Jadhav *et al.*, 2001
19	*Sterculia urens*	VU	Jadhav *et al.*, 2001
20	*Syzygium alternifolium*	EN	Jadhav *et al.*, 2001
21	*Tacca leontopetaloides*	NT	Jadhav *et al.*, 2001
22	*Terminalia pallida*	EN	Jadhav *et al.*, 2001
23	*Trichosanthes cucumerina*	NT	Jadhav *et al.*, 2001

Table 2. Other medicinal plants observed under threat.

S.No	Name of the Species	Family
1	*Naravelia zeylanica*	Ranunculaceae
2	*Tiliacora acuminata*	Menispermaceae
3	*Aspidopteris cordata*	Malpighiaceae
4	*Hiptage benghelensis*	Malpighiaceae
5	*Toddalia asiatica*	Rutaceae
6	*Scleichera oleosa*	Sapindaceae
7	*Cassia montana*	Caesalpiraceae
8	*Cassia senna*	Caesalpinaceae
9	*Vernonia anthelmintica*	Asteraceae
10	*Alstonia scholaris*	Apocynaceae
11	*Laptadenia reticulata*	Asclepiadaceae
12	*Telosma pallida*	Asclepiadaceae
13	*Solanum seaforthianum*	Solanaceae
14	*Andrographis nallamallayana*	Acanthaceae
15	*Vitex negundo var purpurascens*	Verbenaceae
16	*Aristolochia elegans*	Aristolochiaceae
17	*Baliospermum montanum*	Euphorbiaceae
18	*Streblus asper*	Moraceae
19	*Kaemfaeria rotunda*	Zingiberaceae
20	*Dioscorea wallichii*	Dioscoreaceae
21	*Chlorophytum arundinaceum*	Liliaceae
22	*Actiniopteris radiata*	Actiniopteridaceae

various reasons.

These medicinal plants are under threat due to habitat destruction over-harvesting, over-exploitation, collection of roots for commercial purpose without knowing the importance of plants, tribal people collect the material for their own sustenance and livelihood, so many plants are at the verge of extinction. Some pharmaceutical companies lure the mediators by offering handsome amounts to procure medicinal plant resources from the Tribals, depleting forest wealth.

Conservation : Urgent steps are required at different levels to conserve the dwindling medicinal plant species. Some of the Biodiversity conservation strategies are suggested.

1. Preservation of species that are endangered.
2. Preservation of extinction through sound planning and management
3. Identification, safe guarding , protection and habitats of wild relatives.
4. Establishment of herbal gardens for creating awareness.
5. Sustainable harvest of selected species with community involvement.

GBM is currently known to harbour more than 500 medicinal plant taxa of which 485 were recorded. The communities living in and around the forests area especially the tribal chenchus are dependent on these resources for their basic livelihood. Many medicinal species are being threatened due to over exploitation. Poverty is the root cause of biodiversity loss and failure of conservation programmes. Over exploitation of medicinal plants can be reduced by increasing food security to insecure population of the area. Mobilize local people through interaction and discussion to conserve areas of high biodiversity and improve the natural plant resources. There is an urgent demand all over the world, not only to save natural reserves but also combat the effect of global warming through massive forestation programmes. The conservation of these plant species, and a search for natural alternatives to these would pave way for excavating the hidden medicinal wealth.

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