

SURVEY OF SOME ENDANGERED SPECIES OF ANGIOSPERMIC PLANTS OF MADHUBANI DISTRICT OF BIHAR

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ABSTRACT

Madhubani District is the border district of Bihar which is adjacent to Nepal and therefore, bears a rich biodiversity. However, due to rising population, the agricultural lands and forest cover are being converted into residential and industrial land. In addition, over grazing and brutal destruction of the native flora, has caused loss of species in the area. A survey of few blocks of the district was made in different seasons. Plants were collected and identified with the help of Haines Flora and other books. When the list of the identified species was compared with the species mentioned by Haines in his book, surprisingly it was observed that some of the species are missing in a particular area. Similarly in other areas some species were scattered in such a way that their fecundity was not possible. They were surrounded by another species. Based on the population, density, frequency etc plants were regarded as rare, similarly those species which are mentioned under endangered or vulnerable categories by other workers as mentioned in "Red Data" book were enlisted.

KEYWORDS : Biodiversity, Rare, Vulnerable, Endangered, Red Data Book, Fecundity.

Biodiversity of a particular area includes plants of immense importance. But modern life style, urbanization, industrialization, release of sewage, dumping of solid municipal wastes, over grazing, and brutal destruction of the flora, all have badly damaged our biodiversity and therefore, several species are facing danger for their existence.

Madhubani district is (between 26° 21' N and 87° 07' E) bordered by Nepal in North, Darbhanga in south, Saharsa and Nirmali in the East and Sitamarhi in the west. Because it is adjacent to Nepal and there are near about 10 rivers and rivulets, so the soil is much fertile and has promoted luxuriant growth of several Angiospermic flora and thus has a rich biodiversity. Average rainfall in Madhubani district is 49.7" and there is average 58 rainy days throughout the year. The temperature ranges between 40°C to 100°C during summer to winter. The fertile soil due to different rivers, the annual rainfall and the temperature helped growth of variety of species constituting the diversity in the district.

MATERIALS AND METHODS

Survey of different habitat viz., banks of rivers, grassy fields, wetlands, disturbed areas, etc was made in different seasons. Species were collected and were identified with the help of different flora. These species

were grouped under monocotyledons, Herbaceae and Lignosaceae on the basis of their characteristic features. During survey the ecology and factors responsible for the degradation of the biodiversity were also recorded.

RESULTS AND DISCUSSION

During survey it was observed that species diversity depended on the seasonal variations and on the same place different annual species were found to grow in specific season. Altogether 106 species belonging to monocotyledons, 142 species herbaceae, and 189 species of lignosa among the dicotyledones were recorded in the survey. Above list was compared with the list of plants identified and reported by Haines from old Darbhanga (Darbhanga + Madhubani). It was found that species mentioned by Haines in his flora are not present in their original form, rather some species are missing and some new species are growing in the area.

Species which are endangered, rare, vulnerable critically endangered have been listed below in the Table 1.

DISCUSSION

Survey of selected areas of Madhubani was done in different seasons. Plants which were abundant earlier in these areas but now represented by fewer number have been selected in the above table. Accordingly they are designated

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Table 1

S.L. No	Plant's Name	Family	Status
1	<i>Adathoda beddomei</i>	Acanthaceae	Endangered
2	<i>Alstonia venerata</i>	Apocynaceae	Rare
3	<i>Anthocephalus cadamba</i>	Rubiaceae	Rare
4	<i>Abrus prectorius</i>	Papilionaceae	Vulnerable
5	<i>Arthocarpus lakoocha</i>	Moraceae	Rare
6	<i>Blumea lanceolaria (Roxb Orace)</i>	Compositae	Vulnerable
7	<i>Butea monosperma</i>	Papilionaceae	Rare
8	<i>Chenopodium ambrogiodes</i>	Chenopodiaceae	Vulnerable
9	<i>Crotolaria shevaropensis</i>	Papilionaceae	Vulnerable
10	<i>Corcuma aeruginosa</i>	Zingiberaceae	Endangered
11	<i>Euphorbia antiquorum</i>	Euphorbiaceae	Rare
12	<i>Eleusine indica</i>	Poaceae	Rare
13	<i>Ficus racemosa</i>	Moraceae	Vulnerable
14	<i>Gomphostemma eiocarpa</i>	Lamiaceae	Vulnerable
15	<i>Jasmine azoricum</i>	Oleaceae	Endangered
16	<i>Leucas vestita (Benth)</i>	Lamiaceae	Vulnerable
17	<i>Leucas caphalotodes (Roth. Sprang)</i>	Lamiaceae	Vulneralbe
18	<i>Madhuca indica</i>	Sapotaceae	Rare
19	<i>Michelia champaca</i>	Magnoliaceae	Rare
20	<i>Murraya indica (wight)</i>	Rutaceae	Endangered
21	<i>Morus alba</i>	Moraceae	Rare
22	<i>Narodostachys grandiflora</i>	Valeriniaceae	Rare
23	<i>Ocimum opposititolium</i>	Lamiaceae	Endangered
24	<i>Panicum colonum</i>	Poaceae	Rare
25	<i>Spondias mangifera</i>	Anacardiaceae	Rare
26	<i>Sarbaca ashoka</i>	Caesalpiaceae	Critically Endangered
27	<i>Terminalia crennlata</i>	Combretaceae	Rare
28	<i>Wedlandia thyroids</i>	Oleaceae	Rare

as endangered, critically endangered, vulnerable or rare. Above situations might have developed due to habitat destruction. These habitats which were once covered by the wild species have been disturbed due to urbanization,

construction of roadways, Railways and due to release of municipal wastes and sewage. Water logging due to ill developed water canal may be another cause of habitat destruction. Over grazing, brutal cutting or uprooting of

these wild species, use of different pesticides also damaged them.

Strategies and need of conservation of biodiversity- its economic values have been suggested by Pearce and Moran (1994). In particular large biomedical and biotechnological research endeavors have become the leading means to allocate market values to biodiversity, Merrifield (1996); Straus (1990); Tapia (1996). Biodiversity is regarded as source of materials and information for biotechnology (Swanson 1996). It is proposed that the discovery of pharmaceuticals from natural products will both promote sustained economic growth in developing countries and conserve biological resources. In the globalization of biodiversity, the issue of intellectual property rights over life forms and process has acquired a prominent role. Intellectual property systems are encouraged to support the market and biotechnological values of genetic resources and biodiversity. This will promote conservation of biodiversity. It is essential to popularize this fact among the common people that biodiversity is essential for their agroecological practices, their food security, their primary health care, the local ecosystem resilience, and many cultural values alike. Local people must be trained and promote for the agrobiodiversity for many of the wild and cultivated species. They should be encouraged for agroecological practices so that they may cultivate wild species in their crops field. All these practices may promote the conservation of native biodiversity.

The market oriented and market demanding paradigm of biological research, the main stream pressures for a global market based, and privately- run frame work for biodiversity and research not only neglect the indigenous context, but also force it to drastic transformation. There is need to give importance to the fact that indigenous peoples are rooted in a community economy rather than a full market economy. Gudemans (1996).

In our country, importance, conservation and application of biodiversity has been discussed by Arora 1988, Singh and Misri, 1993, Rao 1994, Singh 1995, Shankar et al 1995, Chopra 2000, Somanathan 2005, Ali and Pelkey 2013 and Nayer et al; (2014). They stressed on the conservation of biodiversity and pointed out that

biodiversity consists materials of genetic diversity, for application in Biotechnology and source of medicinal plants to be used in Pharmaceutical companies.

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