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Phytogeographical Distribution of Butea monosperma in Bhilwara District, Rajasthan

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Abstract: **Butea monosperma, commonly known as the "Flame of the Forest," is a medium-sized deciduous tree widely distributed across Rajasthan, particularly in the Bhilwara district and the broader Mewar region. This study explores the phytogeographical distribution of Butea monosperma in Bhilwara, focusing on its natural habitats, ecological preferences, and climatic conditions influencing its growth. The species is predominantly found in stony, rocky terrains, and riverine areas with moderate rainfall (>40 cm annually). The tree's distribution correlates strongly with altitude, soil type, and microclimatic conditions within the district**

Keywords: Butea monosperma, Phytogeographical Distribution, Bhilwara District, Flame of the Forest, Ecological Preferences, Vegetation Mapping.

BUTEA MONOSPERMA:

Local name - Palas, Dhak.

1.1. Vegetation Characteristics–

The tree belongs to the family Leguminosae. It is a medium sized deciduous tree and observed with average height of 5 to 8 meters. The tree is also called "Flame of the forest" and also known as Bastard Teak, from leaf class point of view it false in Macrophylls class. From life forms classification point of view it belongs to micro phanarophytes. From Xerophytic categorization it falls under rest of the species. Its flowers start appearing in February and stay on normally up to the end of April. The upper parts of flowers are brick red. These give the plant shows handsome look despite if is leaf less during spring season. The flowers from a gorgeous canopy in the upper portion of the tree, gives the appearance of a flame from a distance.

1.2. Ecoclimatic Conditions And Habitat–

The plants grow and develop in the areas having 45 to 100 cm rainfall. It is also more common with low slope areas and also in foot hill areas. It has general occurrence in between the temperature limitations of 35^{o}C mean maximum and 10^{o}C mean minimum monthly temperature values. As far as the soil is concerned, its density is found more in the black soil areas of the district. It is a tree of sub-humid climate, although it is also observed in hillyareas which have better moisture conditions semi-arid climate. It has a poly climax tendency and thus observed in more or less in different habitats. It is observed that it is found more in hilly habitat with stony and rocky surface.

1.3. Applied Categorisation –

It has all five applied category fuel, fodder, edible, medicinal and commercial.

1.Fuel -
Its stem is used for fuel purpose. It is a low quality of fuel from burning durability point of view, gnarly it is used as a fuel when there is no alternate in this aspect.

2. Fodder-
The cattle also eat the Dhak foliage quite eagerly, thus it is used for fodder purpose.

3. Edible–
The juice excluded by the bark produce ruby colored gum beads. The gum is used for edible purpose and mixed with the gum of Acacia Senegal.

4. Medicinal–
The seeds are used in "Ayurvedic" and Unani medicine for treating a number of human maladies. Its flowers are some time used as insecticide.

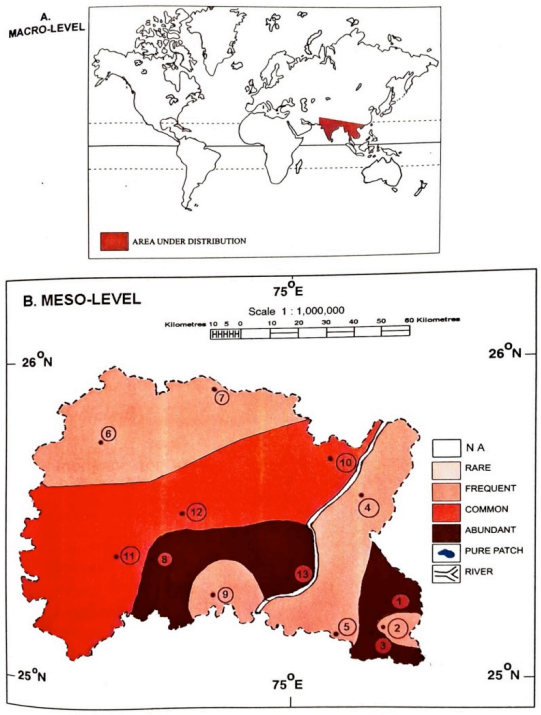
5. Commercial–
From commercial point of view it has great value its leaves are used as cheap leaf plates and caps for rural feast which are locally known as "Pattal and Doona" which has local market value in business. In some parts of country these leaves are used for wrapping tobacco to make "Biddies" The Dhak tree acts as a host for lac insect and is this fore useful in producing natural lac. Its wood is used for making wills carves and piles the Dhak flowers yield an orange dye.

1.4. Phytogeographical Distribution–

A. Macro distribution -
As shown in **Figure-A** has shown its distribution in Indian sub continent and some parts of south eastern Asia. It is quite common in Shrilanka (northern part); it has common distribution in Indogangetic planes and also in many parts of Daccan plateau.

B. Meso distribution–
Figure-B shows its Phytogeographical distribution at district level. The tree is observed in two patches as abundant in which one is located in south eastern part and another is located in middle southern part of Bhilwara district, both cover 20% area of the district. The south eastern patch is located in Beejoliya tehsil covering Beejoliya and Govindpura locality in Beejoliya tehsil. In this patch the tree density is observed more than 100 trees per sq km area. The patch covers 8% areas of the district. Another patch is located in the south western part from south main Banas river it includes Bigod locality of Mandalgarh tehsil, there it extends southern part of Kotri tehsil and spread in the west by covering Suras locality of Mandal tehsil and then it extends in south of Bhilwara tehsil. This patch covers 12% area of the Bhilwara district.

Figure- Phytogeographic Distribution of Butea monosperma.



The tree density in this abundant patch is observed 100 to 150 trees per sq km area. Common Phytogeographical occurrence of the tree is found in a big patch which extends from Pander locality of Jahazpur tehsil, it includes eastern part of shahpura tehsil 50% part of Banera tehsil by including Banera locality, 30% part of eastern Mandal tehsil, more or less complete tehsil area of Raipur and Sahara. The whole area in this way extends in west ward from upper main Banas River to the south western part of the district by covering more or less part and portion of seven tehsil as mentioned above 35% area of Bhilwara district is found under common Phytogeographical distribution of Dhak trees. The frequent occurrence of the trees is observed in four patches. It covers 45% area of the district. The smallest patch is located in south eastern part of the district by including Ganeshpura locality, of Beejoliya tehsil. It covers about 3% area of the district. Another patch is observed in southern part of Bhilwara tehsil by including Hameergarh locality this patch covers 7% area of the district. The third patch spread from north to south in eastern side of main BanasRiver. It extends from Jahazpur tehsil by including Nathun locality; it spreads further in south of Menal locality ofMandalgarh tehsil and stretches up to western part of Beejoliya tehsil, the patch covers 15% area of the district. Here the tree density of Dhak is observed about 80 plants per sq km area. The fourth patch of frequent distribution is found in north western portion of Bhilwara district. It includes 80% area of Hurda tehsil by including Gulabpura locality and more or less completely Asind tehsil by including Asind locality. It also covers Northern part of Mandal tehsil; this patch covers 20% area of Bhilwara district. The tree density is also observed here 50 trees per sq km area.

1.5. Conclusion

The study confirms that Butea monosperma thrives in Bhilwara district under specific eco-climatic conditions marked by rocky and stony habitats with moderate rainfall. Its distribution is uneven, with dense populations in microhabitats that provide optimal humidity and soil conditions. The species is significant for local biodiversity, traditional medicine, and ecological stability. Conservation of these habitats is crucial for sustaining the natural populations of Butea monosperma in the region.

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