

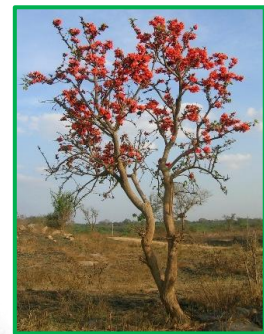
Palash: A Symbol of Resilience in Arid Landscapes

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The Palash tree [*Butea monosperma* (Lam.)Kuntze] is a tall symbol of resilience in the vast and difficult landscapes of arid regions, where the scorching sun and little rainfall pose formidable challenges to flora and fauna. Often referred to as the Flame of the Forest, this native tree flourishes in the most extreme circumstances, adding a splash of vivid color and vitality to otherwise dry surroundings. *Butea monosperma* is a species of flowering tree, commonly referred to as Palash, Flame of the Forest, or Bastard Teak. This medium- to large-sized deciduous tree can grow up to 25 meters in height. The usual range for *Butea monosperma* is low to medium altitudes. It is uncommon in regions with high altitudes. Certain pigments are responsible for the vivid color of *Butea monosperma* flowers. The main pigment that gives the flowers their characteristic orange to red hue is a flavonoid called "butein." Natural chalconoid butein is a kind of flavonoid with antioxidant characteristics.



Distribution: Native to parts of South Asia, [*Butea monosperma* (Lam.)Kuntze] is a deciduous tree. These distributions are as follows:

- India: In many Indian states, [*Butea monosperma* (Lam.)Kuntze] is widely distributed. It can be found in both the country's north and center. There are several states where the tree is frequently found, including Madhya Pradesh, Uttar Pradesh, Rajasthan, and Maharashtra. In the past, Jharkhand and Bihar are where palash first appeared. Much of the Doaba area between the Ganges and Yamuna was covered by Dhak forests, but as the English East India Company increased its tax demands on the peasantry in the early 19th century, these were cleared for agriculture.
- Bangladesh: The species is found in Bangladesh as well, where it is referred to as "Palash." It is also found in Nepal, Sri Lanka, and Pakistan.

Chromosome no.: 2n=14, **Family:** Fabaceae, **Genus:** Butea, **Species:** [*Butea monosperma* (Lam.)Kuntze], *Butea monosperma* var. *lutea*,

1. **Flowers:** The flowers are 2.5 cm (0.98 in) long, bright orange-red, yellow and produced in racemes up to 15 cm (5.9 in) long.
2. **Calyx and Corolla:** The flowers have a tubular calyx and a corolla with five petals. The overall appearance is eye-catching, especially when many flowers bloom together on the tree.
3. **Leaves:** Type: Compound leaves, trifoliolate (composed of three leaflets), Leaf Arrangement: Alternate with 8-16 cm petiole, Leaflets: Each leaf consists of three lanceolate or ovate leaflets of 10-20 cm length, Leaflet



size: The terminal leaflet is generally larger than the two lateral leaflets, Leaflet margins: The margins of the leaflets can be entire (smooth) or slightly serrated.

4. **Fruits:** The tree produces flat, oblong pods that contains seeds.
5. **Color:** The flowers are known for their bright and vivid colors, typically ranging from orange to deep red. The intense hue is one reason why the tree is often referred to as the "Flame of the Forest." Yellow colour variety of Palash — scientifically known as *Butea monosperma* var. *lutea* is a rare mutation and is found in very few numbers, compared to its red counterpart.
6. **Shape:** The flowers have a unique shape, resembling a flame or a bunch of flames, which contributes to their common name. Each flower has a tubular structure with a spreading crown of petals.
7. **Arrangement:** The flowers are arranged in dense, terminal racemes. These elongated clusters of flowers make a spectacular display when the tree is in bloom.
8. **Blooming Period:** *Butea monosperma* is known for its seasonal blooming, typically occurring during the spring. The flowering period often coincides with the Hindu festival of Holi, adding cultural and religious significance to the tree.
9. **Fragrance:** The flowers of *Butea monosperma* may have a faint fragrance, and their visual appeal is a major attraction.
10. **Use in Festival:** In addition to their aesthetic value, the flowers are often used in religious and cultural festivals, including Holi, where they may be used for decoration or in rituals.
11. **Wood:** Color: The wood is hard and durable, with a reddish-brown color. Use: The wood is sometimes used for construction and furniture.
12. **Root System:** *Butea monosperma* typically has a well-developed taproot system, which helps the tree access water in arid and semi-arid conditions.
13. **Phenology:** *Butea monosperma* is deciduous, shedding its leaves during the dry season and producing new foliage when conditions are favorable.

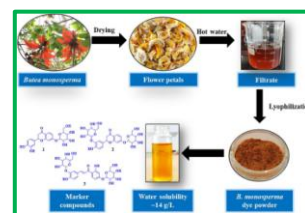


Soil suitability: *Butea monosperma* is a hardy tree that can adapt to a range of soil types, but it generally prefers well-drained soils. The species is commonly found in various soil conditions such as Sandy loam soil which is well drained and suitable for arid and semi-arid region as well as lateritic soil. The pH should be slightly acidic to neutral with the range of 6 to 7.

Climatic Requirement: *Butea monosperma* thrives in warm to hot temperatures. It is well-suited to tropical and subtropical climates where temperatures remain relatively high throughout the year. The tree prefers full sunlight for optimal growth and flowering. It is well-suited to open areas where it can receive ample sunlight. *Butea monosperma* is adapted to tropical humidity levels. It can tolerate high humidity, which is common in tropical climates. It can tolerate temperatures up to 40°C (104°F). It is not well-suited to arid climates with extremely limited rainfall.

Religious Value:

1. **Holi Festival:** In India, the blooming of *Butea monosperma* coincides with the festival of Holi, a Hindu spring festival known for its vibrant colors. The bright orange to red flowers of the Palash tree are often associated with the celebration of Holi, and people use the flowers to make traditional Holi colors.
2. **Dye:** The flowers of *Butea monosperma* are used to produce a natural dye, often used for coloring cloth and playing Holi.
3. **Religious Rituals:** The tree is considered sacred in Hinduism, and its flowers are used in religious rituals dedicated to Lord Shiva. The vibrant and distinctive appearance of the flowers adds to their significance in religious ceremonies.



4. **Symbolism:** The Flame of the Forest is sometimes considered a symbol of the changing seasons, marking the arrival of spring. Its fiery blossoms are seen as a symbol of vitality and energy.
5. **Traditional Medicine:** Various parts of the *Butea monosperma* tree, including the bark and flowers, are used in traditional medicine. The tree is believed to have medicinal properties and is used in Ayurvedic practices for different ailments.
6. **Wood use:** The wood of *Butea monosperma* is sometimes used in sacred fires, and it may have cultural importance in certain rituals and ceremonies.
7. **Folklore:** In some cultures, there are folk stories and traditions associated with the Flame of the Forest. These stories often reflect the cultural richness and biodiversity of the regions where the tree is found.
8. **Afforestation and Conservation:** Beyond its religious and cultural significance, *Butea monosperma* is also valued for its role in afforestation and soil conservation. Planting this tree is seen as a positive environmental action in some regions.

Medicinal use: Different parts of the tree, including the bark, flowers, seeds, and gum, are utilized for medicinal purposes. The bark of *Butea monosperma* is believed to have anti-inflammatory properties. Extracts from various parts of the tree, including the leaves and flowers, have been studied for their potential antimicrobial properties. They may have activity against certain bacteria and fungi. The bark and gum of *Butea monosperma* are traditionally used for promoting wound healing. They are applied topically to wounds to aid in the healing process. Antioxidants help neutralize free radicals in the body, potentially reducing oxidative stress. Helps in regulating blood sugar levels. Some studies have explored the potential anti-cancer properties of *Butea monosperma* extracts.

Lac Production: The tree serves as a crucial host in India for the lac bug (*Laccifer lacca*), which creates shellac. It produces the most lac sticks per hectare of any lac tree.

Leather Production: The bark produces a crimson exudate that, when dried, hardens into a substance called "Butea gum" or "Bengal kino." The gum is considered valuable by druggists because of its astringent qualities and by leather workers because of its tannin.

Culinary Use: The gum from the tree, called kamarkas in Hindi, is used in certain food dishes. In Maharashtra state of India it is prepared as a summer beverage out of tea of the flower which is considered to have medicinal benefits.

Patravali plate: In villages of many parts of India, for example in Maharashtra, this tree provides the leaves that are used either with many pieced together or singly (only in case of a banana leaf) to make a leaf-plate for serving a meal.



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