

## *Tipuana tipu* (Benth.) Kuntze

### Taxonomy and nomenclature

**Family:** Fabaceae (Papilionoideae)

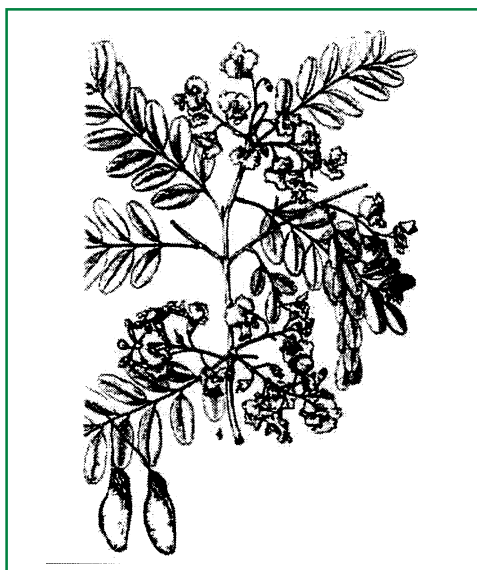
**Synonyms:** *Machaerium tipu* Benth., *Tipuana speciosa* Benth., nom. illeg.

**Vernacular/common names:** tipu tree, racehorse tree, pride of Bolivia (Eng.); tipa (blanca), palo mortero (Sp.).

### Distribution and habitat

Indigenous to southern Bolivia and northern part of Argentina. It is a common tree in the gallery forests of the Andes where it is found both in valleys and in mountain forests up to 2900 masl. In Bolivia it forms open forests, often in association with *Schinopsis hankeana*, *Schinus molle*, *Jacaranda mimosifolia*, *Acacia visco*, *Tecoma garrocha* and *Dodonea viscosa*.

It grows under a wide range of climatic conditions and tolerates a variety of soils. It is found in the dry valleys of the Andes as well as in humid areas receiving more than 2500 mm rain/year. It prefers soils with good drainage but is in general able to grow on most sites, including foothills and the borders of dry farming lands. It is drought resistant, tolerates temperatures below 0°C and survives very high levels of salinity. Widely planted in other parts of the world in tropical to warm temperate climates.



Flowering branch and fruits.

### Uses

The fast growth makes it a valuable species in reforestation programmes. It is used for windbreaks and erosion control and, as it is nitrogen fixing, for soil improvement. In the valleys of Bolivia it is considered the most important fodder species, being one of the few species that produces fodder during the dry periods in the winter. The dead leaves produce litter that improves soil texture and nutrient content, and the growth of *Panicum* and other grasses is enhanced in the sub-canopy area, leading to increased pasture quality and, usually, dry matter production.

It produces valuable timber (rosewood) that is used for furniture and cabinet-work and is also a source of firewood and charcoal. It regrows well after grazing and is suited for coppicing. The ample crown provides good shade and has made the species a popular ornamental.

### Botanical description

A large, semi-deciduous tree up to 20 m, occasionally 30 m, with spreading crown. The trunk is straight and the bark is thick and fissured, flaking with age. When cut, the branches exude a red and sticky sap.

Leaves pinnate, 10-20 cm long, with 11-29 leaflets. Flowers bisexual, yellow to orange, in long loose inflorescences.

### Fruit and seed description

**Fruit:** single-seeded, flat, indehiscent, winged pod (samara), 4-7 cm long, yellow-green at first later grey-brown.

**Seed:** typical legume seed, reddish in colour. There are 1500-7000 seeds (dewinged fruits) per kg.

### Flowering and fruiting habit

In the area of natural distribution flowering takes place from late October to mid December. The fruits are mature around May when leaf fall commences. Trees normally start to set fruit when they are 8-10 years old.

### Harvest

The fruits are harvested from the tree when they are dry and of grey-brown colour.

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### Processing and handling

After collection the fruits are dried in the sun and the wings are removed. The seeds are firmly enclosed in the fruit and are not extracted, the unit for sowing is the de-winged fruit.

### Storage and viability

The seeds are orthodox and if stored at low moisture content at low temperatures, they can retain full viability for several years.

### Dormancy and pretreatment

Unlike most legume seed, the seeds of *T. tipu* are not hardcoated and normally need no pretreatment to germinate.

### Sowing and germination

The seeds are sown in a seedbed and covered with a layer of substrate or sand, not more than 3 mm thick. Germination starts after about 10 days and continues for about 1 month. When the seedlings are 4-6 cm tall, they are transferred to containers and when they are 25-35 cm tall, they are ready for planting in the field.

Outplanting should be done in cool weather and the young plants staked and watered until the roots are established. Planting near buildings should be avoided as the trees have shallow root systems and are likely to be blown over by strong winds.

### Selected readings

**Cruz, N.T., M. Morales and E. Rojas, 2000.** *Tipuana tipu*. Fichas Técnicas de Especies Forestales. BASFOR, Bolivia.

**FAO, 1998.** *Tipuana tipu*. Especies Arbóreas y Arbustivas para las Zonas Áridas y Semiáridas de América Latina. Red Latinoamericana de Cooperación Técnica en Sistemas Agroforestales.

**Killeen, T.J., E. Garcia and S.G. Beck, 1993.** *Guía de Árboles de Bolivia*. La Paz, Bolivia. Quipus.



Foliage and immature fruits. Photo by Brad Monroe, Cuyamaca College.

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