

Delonix regia (Bojer ex Hook.) Raf.

flamboyan

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Other common names. royal poinciana, flametree.

Occurrence and growth habit. A popular ornamental throughout the tropics, flamboyanC*Delonix regia* (Bojer ex Hook.) Raf.Cis a small to medium-sized tree, typically 7 to 16 m high and up to 60 cm in diameter (Little and Wadsworth 1964). The champion Puerto Rican flamboyan, however, is 32 m high and 105 cm in diameter (Francis 1994). It grows well in moist soil derived from limestone, where it is common and reproduces well but is also tolerant of well-drained and somewhat droughty conditions (Francis and Liogier 1991). The species is briefly deciduous. Flamboyan has prominent buttresses and a broad, flat crown when grown in full sun. Its shallow but spreading root system limits the sites where it may be planted. The tree is susceptible to termites, shoot borers, and heart rot (Webb and others 1984). Although the genus is reported to have 3 species, flamboyan is the most cosmopolitan. A native of Madagascar, it has been planted in nearly every country in frost-free areas and is perhaps the most important flowering ornamental tropical tree of the world (Meninger 1962).

Use. This is a beautiful tree in form, shade, and flower. The flowers are predominantly red, although yellow and orange forms are cultivated; they are relatively short-lived as cut flowers. Trees remain in flower for several weeks, however. They are often seen planted along roadsides as living fence posts or as shade trees on both sides of the road that arch over the entire road. The wood is yellow-brown, weak, brittle and soft, with a specific gravity of about 0.3. Although the species is not a good timber source, the wood is widely used as firewood. The legume (seed pod) is edible (Little and Wadsworth 1964; Meninger 1962; Webb and others 1984).

Flowering and fruiting. Showy flowers follow a dry season when the tree is almost leafless. The 5-pointed calyx is hairy and borne on racemes 15 to 25 cm long. Flowers are commonly red but may be white, yellow, orange, or yellow and vary from 8 to 25 cm across. Although flowers form after the dry season and during the wet season, they persist during leaf emergence so that the crown appears feathery green while the colorful flowers are dominant. The hard legumes are 35 to 50 cm long, 6 cm wide, and 5 mm thick, and they hang tenuously on trees year round. When mature, the legumes split into 2 parts lengthwise and are dark brown to black (Little and Wadsworth 1964). There are about 4,500 seeds/kg (2,040/lb) from Puerto Rican sources (Marrero 1949), whereas Colombian sources report only 2,000 to 3,000 seeds/kg (900 to 1,360/lb) (Navarette nd).

Collection, extraction, and storage. Pruning poles should be used to collect dark brown to black legumes. Legumes open naturally on trees after about 6 months. If unopened pods are

collected, they should be dried in the sun for 1 month; then the woody legumes should be forced open and the seeds removed. Seeds are relatively loosely attached in lateral grooves inside the legume. Dry seeds store very well in either open or closed containers and do not require refrigerated storage (Francis 1994). Seeds stored for 12 months at 26 °C germinated at 60% (Marrero 1949). Webb and others (1984) reported viability after 4 years storage but do not give germination rate or percentage germination.

Germination. Scarification is required for germination, with either hot water, sulfuric acid or abrasion. Millat-E-Mustafa (1989) recommends 90 °C water for 10 seconds followed by 24-hour imbibition. A concentrated sulfuric acid soak for 0.5 to 5 hours improved germination for Duarte (1974), whereas a hot-wire scarification proved superior to other means described by Sandiford (1988). All reports of scarified treatments were superior to controls with no treatment. Within 8 days of fresh collections, expect 76% germination after 9 weeks.

Nursery practice. Seedlings are ready for outplanting after 3 to 4 months of growth in plastic nursery bags during the wet season. Saplings are also grown to 2 m, balled and burlap for large ornamental potted plants. Mature flowering and fruiting trees may be grown in 3 to 5 years in good sites (Francis 1994).

References

- Duarte O. 1974. Improving royal poinciana seed germination. *Plant Propagator* 20(1): 15B16.
- Francis JK. 1994. Personal communication. Rio Piedras, PR: USDA Forest Service, International Institute of Tropical Forestry.
- Francis JK, Liogier HA. 1991. Naturalized exotic tree species in Puerto Rico. Gen. Tech. Rep. SO-82. New Orleans: USDA Forest Service, Southern Forest Experiment Station. 12 p.
- Little EL Jr, Wadsworth FH. 1964. Common trees of Puerto Rico and the Virgin Islands. *Agric. Handbk.* 249. Washington, DC: USDA Forest Service: 176B177.
- Marrero J. 1949. Tree seed data from Puerto Rico. *Caribbean Forester* 10: 11B30.
- Menninger EA. 1962. Flowering trees of the world. New York: Hearthsides Press. 336 p.
- Millat-E-Mustafa M. 1989. Effect of hot water treatment on the germination of seed of *Albizia lebbek* and *Delonix regia*. *Bano-Biggyan-Patrika* 18(1/2): 63B64.
- Navarette EJ. [no date]. Informacion basica y tratamientos pregerminativos en semillas forestales. City, Colombia: Ministerio de Agricultura, Estacion Forestal la Florida. 28 p.
- Sandiford M. 1988. Burnt offerings: an evaluation of the hot-wire seed scarifier. *Commonwealth Forestry Review* 67(3): 285B292.
- Webb DB, Wood PJ, Smith JP, Henman GS. 1984. A guide to species selection for tropical and sub-tropical plantations. *Trop. For. Pap.* 15, 2nd ed. Oxford: University of Oxford, Commonwealth Forestry Institute: 256 p.