Fabaceae—Pea family

Pithecellobium dulce (Roxb.) Benth.

guamúchil

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Nomenclature. *Pithecellobium* is a genus of about 110 species, mostly native to Asia and tropical America. The taxonomy of this genus has been changed in recent years, and the names of some species are still in debate. *Pithecellobium saman* (Jacq.) Benth., which was included in the 1974 edition of this work (Walters and others 1974), became *Albizia saman* (Jacq.) F. Muell., then *Samanea saman* (Jacq.) Merr. In the current book, it is included in *Albizia*. Texas ebony (*P. flexicaule* (Benth.) Coult.) is now *Ebenopsis ebano* (Berl.) Barneby & Grimes and appears under that name in this book.

Growth habit, occurrence, and use. Guamúchil, also known as Madras thorn and monkeypod, is valued primarily for its fuelwood, fodder, and ornamental properties (Parrotta 1991). It is found on the Pacific slopes of Mexico and southern California, south to Colombia and Venezuela. Guamúchil has been planted in Florida, Puerto Rico, and Hawaii (Little and Wadsworth 1964) and has been introduced to India and Pakistan as a hedge plant (Khatra and others 1994). The species has become naturalized where planted and is now considered a pest in Florida (Morton 1976). It is a medium-sized tree that reaches heights of 22 m.

Flowering and fruiting. Guamúchil's white flowers are umbels, about 3 cm in length, that are borne in paniculate clusters on branch ends (figure 1). The species flowers primarily from December to May but is known to fruit throughout the year in Puerto Rico (Parrotta 1991). Fruits are linear, curved legumes (pods) that range in length from 10 to 13 cm (figure 1). They turn from green to brown or black when they ripen in February to August. The legumes may contain 5 to 12 seeds each, and they are dehiscent (Parrotta 1991). The seeds are reddish brown to black, elliptical, beanlike, and about 1 cm in length. As the legumes split open, the seeds often hang down partially enclosed in a pulpy aril that may be 2 cm long (figure 2). Seds vary widely in size, ranging from 6,000 to 26,000/kg (2,720 to 11,800/lb) (Little and Skolmen 1989; Parrotta 1991).

Collection, extraction, and storage. Legumes may be picked from the trees or from the ground, and air-dried in the sun. Seeds can be removed by hand-flailing or by use of a macerator, and pod fragments can be removed with screens. There are no long-term seed storage data for guamúchil, but these are typical hardseeded legumes with orthodox storage behavior. The seeds should be easy to store at low moisture contents (<10%) and low temperatures (any refrigeration) for a number of years.

Germination. Official seed testing organizations do not include guamúchil in their prescriptions for testing, but tests with a single seedlot in Costa Rica found that germination averaged 93% over a wide range of conditions (Castro 2000). Temperatures of 24, 27, 30, and 32

°C were equally good, and light from 0 to 24 hours made no difference either. Scarification with sulfuric acid or by clipping the seedcoats gave germination above 90%, but hot water treatments and long soaks at room temperature were not as successful. Good germination of this species without pretreatment has also been reported (Parrotta 1991).

Nursery practice. Guamúchil seeds germinate 1 to 2 days after sowing without treatment in Puerto Rico. Seedlings reach a good outplanting height of 40 cm approximately 3 months after sowing. This species can also be grown from cuttings (Parrotta 1991).

References

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Figure 1—*Pithecellobium dulce*, guamúchil: flowering twig, leafy twig, legumes, and seeds, × 1 (from Little and Wadsworth 1964).

Figure 2—*Pithecellobium dulce,* guamúchil: seed partially enclosed in the pulpy aril, × 2 (from Gunn 1984).