

Malvaceae—Mallow family

Thespesia Soland. ex Correa

thespesia

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Species, occurrence, and growth habit. There are 17 species of *Thespesia*, all trees or shrubs (Howard 1989). Two are of particular interest. *Thespesia populnea* (L.) Soland. ex Correa—with botanical synonyms, *Hibiscus populneus* L. and *T. lampas* (Cav.) Dalz. ex Dalz. & Gibson—is known locally as portiatree, seaside mahoe, emajagüilla, milo, and many other names (Little and Skolmen 1989; Parrotta 1994). Portiatree is native to tropical shores from East Africa to Polynesia. It has naturalized and is planted in coastal areas throughout the tropics. Portiatree is a small tree in moist habitats, although it is often shrubby on dry or salty coastal soils.

Thespesia grandiflora DC.—known as maga—is a small to medium-sized tree with a straight stem that is endemic to Puerto Rico (Francis 1989). This species has been referred to in the literature by the botanical synonyms *Montezuma speciocissima* Sessé & Moc., *M. grandiflora* DC., and *Maga grandiflora* (DC.) Urban (Francis 1989).

Use. Portiatree is planted as an ornamental throughout the tropics, especially in coastal areas. Its manageable size, heart-shaped, yellow-green leaves, and yellow flowers endear it to many. More than for any other reason, portiatree succeeds as an ornamental because it can grow on almost any soil. Maga is planted as an ornamental in Florida, Hawaii, Puerto Rico, and several other locations (Little and Wadsworth 1964; Neal 1965). Although its dark-green foliage is very attractive, its large (15 cm) dark pink flowers are its principal asset. Maga requires fertile soils and does not tolerate compaction. The wood of both species is dark reddish brown to chocolate brown, moderately heavy, and moderately hard, with excellent working properties. The small amounts of portiatree wood available fetch high prices and are used for carving, furniture, and posts. The small amounts of maga harvested are used for making musical instruments, furniture, and craft items. Seeds of portiatree are widely used for medicinal purposes (Little and Skolmen 1989; Parrotta 1994).

Flowering and fruiting. Open-grown maga are reported to begin flowering when 5 to 10 years old (Francis 1989); portiatree flowers even earlier. Except in dry areas and seasons of drought, flowering and fruiting of both species proceeds throughout the year (Francis 1989; Parrotta 1994). The fruits of portiatree are flattened, leathery 5-celled capsules 2.5 to 4.0 cm in diameter and 2 cm long (Rashid 1975). They may remain attached to the tree for some time. A sample of 50 fruits from Puerto Rico contained from 1 to 11 seeds/fruit with an average of 5.7 seeds/fruit (Parrotta 1994). The seeds are hairy, 1 cm long, and 0.6 cm broad (figure 1). Reported weights of air-dried seedlots range from 3,500 to 6,700/kg (1,600 to 3,000/lb) (Francis and Rodríguez 1993; Parrotta 1994; Rashid 1975; Von Carlowitz 1986). The fruit of maga is smooth and green, subglobose, and 3 to 5 cm in diameter. From 1 to 12 brown seeds are embedded within a white, fleshy matrix. Fresh seeds numbered 2,500/kg (1,100/ lb); air-dried seeds, 3,900

seeds/kg (1,800/lb) (Francis 1989). The seeds of portiatree are dispersed by wind and water (Parrotta 1994). Maga depends upon fruit bats and birds for dispersal (Francis 1989).

Collection, cleaning, and storage. Quantities of portiatree fruits can be easily picked off the ground under bearing trees, or they can be picked by hand or clipped with a pruning pole from the branches. The fruits are mature when they have turned black (Rashid 1975). Accumulating quantities of maga seeds is more difficult. Maga fruits can be clipped from the trees when they reach full size (no color change is observed). Fruits that are still hard should be left for 2 or 3 days and will continue to ripen. If not eaten by bats and birds, the fruits fall soon after ripening and can be picked up from the ground. Because bats and birds drop the seeds as they consume the fruits, seeds can be collected from the ground under bearing trees or beneath nearby perch trees. Good seeds have a cinnamon-brown color with a waxy luster and are free of fungal spots. Lighter or darker colors denote immaturity or overmaturity and loss of viability (Marrero 1949). Nursery workers normally clean the seeds by hand, a fairly rapid process. Cleaning with macerators may not be possible due to the fragile nature of the seeds, especially those of maga. Seeds of portiatree are apparently recalcitrant but somewhat resistant to drying and can be stored in sealed containers for weeks to months under refrigeration (4 EC). The seeds of maga are highly recalcitrant. The folded cotyledons (figure 2) are active and turn green within the seed as germination begins. The seeds begin germinating 5 to 7 days after the fruit ripens (Francis 1989). Many of the seeds picked up from the ground, either loose or within rotting fruits, already have the radicle exposed. It is best to place moist paper towels or other moistened material in the collection container and sow the seeds as soon as possible. Viability of maga seeds can be extended to nearly 4 months by drying to 62.5% moisture and storing at 2 to 4 EC (Marrero 1942).

Germination. No pregermination treatments are necessary. Seeds of portiatree should be sown in sandy media and lightly covered (Parrotta 1994). From 65 to 79% of fresh seeds germinate, beginning in 8 days and continuing over a 9-week period (Francis and Rodríguez 1993; Ricardi and others 1977; Parrotta 1994). Maga seeds may be sown and lightly covered in ordinary potting mix. Marrero (1942) reported that, although 70 to 80% of fresh seeds germinated, only 20% of seeds stored at room temperature for 2 weeks germinated. Francis and Rodríguez (1993) reported 80% germination beginning 6 days after sowing. Germination of both species is epigeal (figure 3) (Francis 1989; Parrotta 1994).

Nursery practice. Ordinary nursery practice is to germinate seeds in germination trays or beds and transplant seedlings into containers (pots or plastic nursery bags) after the first true leaves emerge. Portiatree seedlings reach 15 cm (6 in) in height about 3 months after sowing (Parrotta 1994). Moving portiatree seedlings into full sunlight after they are established in the pots is recommended. Rooted cuttings are also used to produce portiatree stock. Maga seedlings develop rapidly in partial shade, reaching 20 cm (8 in) in 3 months and 40 cm (16 in) in 6 months (Francis 1989). Maga seedlings should be moved into full sun a few weeks before outplanting. Seedling stock of either species from 15 to 50 cm (6 to 20 in) can be used to establish plantations. Trees destined to become ornamentals are often grown in pots until they attain 1 to 2 m (39 to 79 in) in height. Wildlings are sometimes collected, potted, and allowed to rebuild their root system before outplanting.

References

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Figure 1—*Thespesia grandiflora*, maga (left), and *T. populnea*, portiatree (right): fruits and seeds.

Figure 2—*Thespesia grandiflora*, maga: seed cut in longitudinal section.

Figure 3—*Thespesia grandiflora*, maga: germination and seedling development.