Fabaceae—Pea family

Paraserianthes falcataria (L.) I. Nielsen

peacock-plume

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Synonyms. *Albizia falcataria* (L.) Fosberg

Other common names. Molucca-albizia, batai, sau, peacock's plume.

Growth habit, occurrence, and uses. Peacock-plume is a large deciduous tree that may reach 30 m in height and 1.2 m in bole diameter. It has a large spreading crown and light gray, smooth bark with small corky warts. This fast-growing native of the Moluccan Islands of Indonesia in the South Pacific has been widely planted throughout many tropical regions of the world and has become naturalized in many of them. The species was introduced into Hawaii in 1917 for ornamental and timber purposes (Rock 1920). The wood is lightweight; moderately weak in bending and compressing strength, and moderately soft and limber (Desch 1941; Gerhards 1966). It has been used for core-stock veneer, pallets, boxes, shelving, and internal furniture parts (Little and Skolmen 1989). In Asia, the wood has been used for fuel, matches, and pulp (Khullar and others 1992). Its lack of resistance to decay and termites, however, limits the value of the wood (Little and Skolmen 1989).

Flowering and fruiting. The flower clusters of peacock-plume are large, lateral panicles 8 to 25 cm in length that are borne at the branch tips. The numerous flowers are long (13 mm), stalkless, and greenish yellow to whitish in color. The legumes (pods) are narrow and flat; they measure 10 to 15 cm long and about 2 cm wide (figure 1). Each legume may contain 12 to 20 oblong, flattened, dark brown seeds, about 6 mm in length (Little and Skolmen 1989; Little and Wadsworth 1964; Wick and Walters 1974). In Hawaii, peacock-plume flowers in April and May, with legumes maturing in June to August (Wick and Walters 1974); in India, legumes mature in May and June (Khullar and others 1992).

Collection, extraction, and storage. The legumes can be picked from the tree after they turn from green to straw color or from the ground by shaking the branches. After being dried in the sun, the legumes should be run through a macerator or flailed by hand to extract the seeds. Debris can be removed with aspirators or air-screen cleaners or by simple winnowing. Empty, immature, and damaged seeds can removed by water flotation or by careful blowing in seed aspirators. There are usually 38,000 to 44,000 cleaned seeds/kg (17,000 to 20,000/lb) (Khullar and others 1992; Parrotta 1990; Wick and Walters 1974). Seeds of peacock-plume are orthodox in nature and can be easily stored when dried to about 8 to 10% moisture content. Dried seeds can be stored for at least 2 years in sealed containers at room temperature, but refrigeration at 3 to 5 EC should be used for longer storage (Parrotta 1990). There are no data on the long-term storage potential of these seeds.

Germination. Seeds of peacock-plume exhibit seedcoat dormancy that can be overcome with acid scarification, mechanical scarification, or hot-water soaking (Khullar and others 1992; Wick and Walters 1974). The first 2 methods have often produced slightly better results, but hot water soaking is less likely

to damage the seeds. Ten to 15 minutes in concentrated sulfuric acid, followed by washing and then 15 minutes of soaking in water has been recommended (Wick and Walters 1974). In hot-water soaking, seeds are immersed in boiling water for 1 to 3 minutes, then soaked in cool water at room temperature for 24 hours immediately before sowing (Parrotta 1990). In a similar method, seeds are immersed in boiling water that is then removed from the heat source and allowed to cool at room temperature; the seeds should remain in the water for 24 hours. Proper treatment with any of these methods should produce germination of 70 to 99% within 10 days (Khullar and others 1992; Parrotta 1990; Wick and Walters 1974). Germination is epigeal.

Nursery practice. In Hawaii, peacock-plume seeds are sown at densities of 300 to 400 seeds/m^2 (28 to 37/ft^2) and covered with about 6 to 12 mm (¼ to ½ in) of soil. Seedlings are usually thinned to the desired seedbed density at maturity of 200 to 250/m^2 (20 to 25 seedlings/ft^2) and outplanted at 8 to 12 months of age (Wick and Walters 1974). Container seedlings and stumped seedlings can also be used to establish this species (Parrotta 1990).

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Figure 1—*Paraserianthes falcataria,* peacock-plume: legumes, H ⅔ (from Little and Skolmen 1989).