

Bauhinia purpurea DC. ex Walp.

K. F. CONNOR
Southern Research Station,
USDA Forest Service

FABACEAE (BEAN FAMILY)

Bauhinia triandra Roxb., *Caspereopsis purpurea* (L.) Pittier, *Phanera purpurea* (L.) Benth.

orchidtree, pata de vaca, pie de cabra, purple bauhinia, ramo de orquídea

About 600 species of *Bauhinia* grow in the tropical regions of the world (Larson 1974). The genus includes trees, vines, and shrubs that are frequently planted for their showy flowers and ornamental foliage (Bailey 1941, Neal 1965). *Bauhinia purpurea* is a native of southeastern Asia from India to China and is planted in Florida, Hawaii, Puerto Rico, the Virgin Islands, and elsewhere in tropical America. The species is rare in Puerto Rico where it spreads slowly and reproduces infrequently (Francis and Liogier 1991).

Bauhinia purpurea is a fast-growing, small to medium-sized evergreen tree, reaching 7.6 m in height and 17.8 cm in diameter. It can reach a height of 4.6 m in less than 2 years (Bailey 1941). The bark is light gray and can be either smooth or finely fissured. The leaves of *B. purpurea* are smooth and elliptic in shape, have rounded lobes, and are divided one-third to one-half their length, forming a heart-shaped base; 9 to 13 main veins radiate from this base (Bailey 1941, Little and others 1974). Leaf blades vary in size from 3.8 to 12.7 cm in length, and the 2.5 to 5.1 cm petioles are enlarged at both ends (Little and others 1974). In Puerto Rico, *B. purpurea* grows in areas that annually receive at least 1500 to 2500 mm of rainfall and that have well-drained, moist soils. The species does not grow well on nutrient-poor or droughty sites.

It is primarily cultivated as an amenity tree, planted for its flowering attributes (Jim 1991). The leaves are edible (Biswas and Bhuyan 1983).

Bauhinia spp. bloom within 3 or 4 years (Bailey 1941). The flowers of *B. purpurea* are borne on unbranched axillary or terminal corymbs in autumn and winter months (Bailey 1941, Little and others 1974); only a few flowers are borne on each corymb. The calyx opens by splitting into two nearly equal parts. There are three to four fertile and six to seven sterile stamens per flower. When fully open, the large, fragrant, five-petaled flowers are 8.9 to 10.2 cm across. The petals

are 5.1 cm long and 1.6 cm wide. Flower color is variable. Bailey (1941) reports that the petals are red in color, with one streaked with white on the claw; however, individual trees may have flowers that range in color from almost white to a rich purple. Little and others (1974) state that the petals are pink or purple in color, with one petal dark red toward the base. The fruits are flat, dark, dehiscent pods ranging from 20.3 to 30.5 cm in length and from 1.9 to 2.5 cm in width (Bailey 1941, Little and others 1974). Fruits twist as they open, expelling the seeds. *Bauhinia purpurea* seeds are shiny-brown, rounded, flat, and 1.3 to 1.6 cm long. Seeds average 4,670 seeds per kg.

Although published reports on the handling of *B. purpurea* pods and seeds are not available, in most hard-seeded, temperate Fabaceae, pod ripeness is determined by a color change from green to light or dark brown (U.S. Department of Agriculture 1974). Ripe pods are picked by hand or shaken/flailed from the trees and then spread to air-dry. Seeds are threshed or mascerated from the dry pods and separated from the chaff by screening, fanning, or water flotation. Once dried (moisture content less than 12 percent; Roberts 1973), seeds are placed in sealed containers and stored between 2 and 4 °C. Francis and Rodríguez (1993) report excellent germination of *Bauhinia* spp. without scarification; 99 percent of the *B. purpurea* seeds tested germinated when placed on moist blotting paper, and germination began within 4 days.

The following information about related species of *Bauhinia* may be useful when preparing *B. purpurea* seeds for planting. Orientation of the seeds in the soil may be important (Prasad and Nautiyal 1995); *B. retusa* seeds sowed with the micropylar end up had the earliest onset of germination and the highest seedling survival rate after 2 months. Those sowed horizontally, or with the micropylar end down in the soil, had lower seedling survival rates and shorter roots. Some species can be propagated from suckers but rarely from cuttings.

ADDITIONAL INFORMATION

Pollen viability can be tested using a sucrose medium containing 20 ppm GA₃ (Kumar and others 1982).

Microscopic examination of the fruits reveals the presence of raised stomata with conspicuous subsidiary cells (Rugenstein and Lersten 1981).

