

Melaleuca quinquenervia (Cav.) Blake



Common Name: Melaleuca, paper-bark, cajeput, punk tree, white bottlebrush tree

Synonymy: *M. leucadendron* (L.) L. misapplied

Origin: Australia, New Guinea, and the Solomon Islands

Botanical Description: Evergreen tree to 33 m (100 ft) tall, with a slender crown and soft, whitish, many-layered, peeling bark. Leaves alternate, simple, grayish green, narrowly lance shaped, to 10 cm (4 in) long and 2 cm (3/4 in) wide, with a smell of camphor when crushed. Flowers in creamy white “bottle brush” spikes to 16 cm (6 in) long. Fruit a round, woody capsule, about 3 mm (3/8 in) wide, in clusters surrounding young stems, each capsule holding 200-300 tiny seeds.

Ecological Significance: Believed to have been introduced to Florida in Manatee County circa 1887. Promoted by the nursery industry as a shade tree and windbreak, and became popular with homeowners for its ability to thrive in both upland and aquatic habitats (Serbesoff-King, 2003). Scattered aerially over the Everglades in the 1930s to create forests (Austin 1978). Widely planted, and recommended as late as 1970 as “one of Florida’s best landscape trees” (Watkins 1970). Now recognized internationally as a threat to the Florida Everglades, a World Heritage Site and International Biosphere Reserve (D. C. Schmitz, 1994 Congressional testimony). Grows extremely fast, producing dense stands that displace native plants, diminish animal habitat, and provide little food for wildlife (Laroche 1994b). Has become abundant in pine flatwoods, sawgrass marshes, and cypress swamps of south Florida (Nelson 1994). By 1994, estimated to infest nearly 200,000 ha (490,000 acres) in south Florida, with extensive stands in the Everglades, Big Cypress, and Loxahatchee Slough (Laroche 1994b). Infested acreage since reduced by an estimated 40,470 ha (100,000 acres) through regional control efforts (F. Laroche, South Florida Water Management District, 1998 pers. comm.). First insect biological control agent released in the Everglades by the United States Department of

Agriculture in 1997 (Cox News Service). Two biological agents released and established to date include the melaleuca weevil (*Oxyops vitosa*) and the melaleuca psyllid (*Boreioglycaspis melaleucae*). A third agent, the melaleuca bud-gall fly (*Fergusonina turneri*), has been released but a viable population has not yet established in the field. A fourth potential biological control agent, the stem-gall fly (*Lophodiplosis trifida*) is still being studied for possible future release (TAME Melaleuca, 2007).

Distribution: Found naturalized in Florida as far north as Hernando, Lake, and Brevard counties (Mason 1997). In Florida, documented as invading scrub, sandhill, coastal berms, maritime hammocks, coastal strands, coastal rock barrens, mesic flatwoods, wet flatwoods, basin marshes, depression marshes, lakes, and ruderal communities. Documented by herbarium specimens in 22 counties throughout the central and southern peninsular counties, including Brevard on the east coast and Hernando on the west coast to Miami-Dade and Monroe counties, including the Keys (Wunderlin and Hansen 2004). Reported in natural areas from Volusia and Lake counties (FLEPPC 2005).

Life History: Prefers seasonally wet sites, but also flourishes in standing water and well-drained uplands (Laroche 1994b). Saplings often killed by fire, but not mature trees. Can survive severe frost damage (Woodall 1981). Grows 1-2 m (3-6 ft) per year; resprouts easily from stumps and roots; capable of flowering within 2 years from seed (Laroche 1994b). Flowers and fruits all year, producing up to 20 million windborne seeds per year per tree, and able to hold viable seed for massive all-at-once release when stressed (Woodall 1983). Melaleuca trees are reputed to be a source of respiratory problems due to presence of abundant volatile oils in leaves and pollens in inflorescences (Morton 1962b), although there is no empirical evidence to support this claim. Morton (1966) reported that even a small amount of volatile oil can result in skin eruption in sensitive persons.