

***Crotalaria spectabilis* Roth**
FABACEAE

showy rattlebox

Synonyms: *Crotalaria leschenaultii* DC.
Crotalaria macrophylla Weinm.
Crotalaria retzii Hitchc.
Crotalaria sericea Retz.



General Description.—Showy rattlebox, also known as showy crotalaria and rattlebox, is an annual semiwoody herb in temperate areas, and a short-lived shrub in its frost-free subtropical and tropical range. In Puerto Rico, it grows up to 2 m in height and 3.5 cm in basal diameter. It normally has a single stem. The lower stems are covered with whorled, short, shelf-like old leaf bases and stipule remnants. The leaves and fruiting branches are shed progressively upward after they mature so that foliage and branches are only found on the upper portion of the stem. The mid- and lower stem has a white, brittle, medium-hard wood with a 1.5-mm pith. The upper stem, branches, and foliage are green to yellow-green. The plant is supported by a tap and lateral system of stiff, tan roots. The simple, whorled leaves are oblanceolate to elliptic, 5 to 17 cm long, entire, and have a 2-

mm petiole and broad, triangular stipules. The inflorescences are terminal or subterminal racemes with 20 to 25 flowers with linear-triangular bracts. The bright yellow unequal flowers are 1.5 to 2 cm long. Inflated brown to black legumes are 3 to 5 cm long and 1.8 to 2 cm thick. They contain several hard, shiny brown to black seeds 4.5 mm long (author's observation, Damron and Jacob 2001. Howard 1988, Liogier 1988, Stevens and others 2001).

Range.—Showy rattlebox is native to the Indo-Malaysia area (Parrotta 2001). It has been planted widely and has naturalized in many tropical countries including the Southern United States, Hawaii, and Puerto Rico (International Legume Database and Information Service 2002).

Ecology.—Not much is known about showy rattlebox in its natural habitat. It grows on roadsides and disturbed areas in Florida (Long and Lakela 1976), and in Puerto Rican coastal sands and limestone rubble in areas receiving about 1650 mm of annual precipitation (author's observation) and at the edge of mangroves (Liogier 1988). Parrotta (2001) reports that it is common along stream banks in deciduous forests in India. The species is a weed of agricultural crops in the Southern United States (Bradley and Hagood 2002). It is intolerant of shade and does not grow under a forest canopy. The species seems to favor sandy soils (McGregor 1976), grows well in alkaline soils, and at least tolerates moderate soil salinity. Plants are often parasitized by dodder (*Cuscuta* spp.) in Puerto Rico. Showy rattlebox is well nodulated with nitrogen-fixing bacteria (McGregor 1976).

Reproduction.—Showy rattlebox blooms all year in Florida (Long and Lakela 1976) but is reported to flower in April and May and fruit in October in Nicaragua (Stevens and others 2001) and flower between November and January and fruit from December to February in India (Parrotta 2001). The flowers are visited by honey bees and other

insects (McGregor 1976). A collection of seeds from Puerto Rico averaged 0.0154 ± 0.0000 or 65,000 seeds/kg. Only 3 percent of unscarified seed placed on moist blotter paper germinated in 6 months. However, 99 percent of scarified seed germinated between 4 and 7 days after sowing. Germination is epigeal. When sufficiently dry, pods spring open, flinging the seeds a short distance.

Growth and Management.—Showy rattlebox has a moderate to fast growth rate and may reach a meter of height by 1 year old. Plants appear to live 2 or 3 years in Puerto Rico. Parrotta (2001) refers to the species as biennial. Plantations are established by sowing scarified seed into prepared ground.

Benefits and Detriments.—Showy rattlebox is a beautiful plant and contributes to the aesthetics of wildlands and gardens where it is planted. It serves as a nurse species during early reforestation and helps protect the soil. Showy rattlebox is used as a green manure crop, particularly where rotation for control of nematodes is important (Zago and others 2002). It has also been grown as a fodder plant. This has largely been abandoned because of the toxic alkaloids (principally monocrotaline) it contains. Concentrations are reported as: leaves 0.008 percent, seedpods 0.366 percent, and seeds 1.958 percent (Burkill 1995). Chickens, turkeys, and quail are very sensitive. Concentrations of crotalaria alkaloids between 0.01 and 0.1 percent of the diet have adverse effects and 0.3 percent is fatal (Damron and Jacob 2001). Horses, cattle, and swine are also sensitive. Sheep, goats, and dogs are more resistant. Effects can be both acute and chronic and include bloody diarrhea, anemia, jaundice, hair loss, and unthriftiness. There is no known treatment (Alabama Cooperative Extension Service 2002). In herbal medicine, extracts of the whole plant are used to treat impetigo and scabies (Jain and De Filipps 1991), as an antiseptic for cuts, and to treat intestinal worms (Parrotta 2001).

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