***Senna occidentalis* (L.) Link** coffee senna
FABACEAE

Synonyms: *Cassia occidentalis* L.
Ditremexa occidentalis (L.) Britt. & Rose

General Description.—Coffee senna is also known as stinking weed, miki palaoa, hedionda, bucho, pico de pájaro, furrusca, bois puante, fedegoso, and many other names. The species varies from a semi-woody annual herb in warm temperate areas to a woody annual shrub or sometimes a short-lived perennial shrub in frost-free areas (Haselwood and Motter 1966, Henty and Pritchard 1975, Holm and others 1997). It usually matures at from 0.5 to 2.0 m in height. In Brazil it is reported to reach 5 to 8 m in height (Raintree 2002). Coffee senna produces a hard, woody tap root with relatively few laterals. It usually has a single purplish stem and sparse branching. Young stems are four-angled, becoming rounded with age. The crushed foliage has an unpleasant odor. Compound alternate leaves have four to six pairs of glabrous leaflets and a gland near the base of the petiole. Leaflets are ovate to ovate-lanceolate, pointed at the tip and rounded at the base. Inflorescences are few-flowered axillary racemes with yellow-petaled flowers about 2 cm across. The legumes (pods) are brown, flat, slightly curved and 5 to 12 cm long. They contain 40 or more brown to dark-olive, ovoid seeds about 4 mm long. The species has 2n = 26, 28 chromosomes (Henty and Pritchard 1975, Liogier 1988, Long and Lakela 1976, Stevens and others 2001).

Range.—Coffee senna grows throughout the tropics and subtropics (Liogier 1988, Stevens and others 2001) including the United States from Texas to Iowa eastward, Hawaii, the Pacific Island Territories, Puerto Rico, and the U.S. Virgin Islands (Natural Resources Conservation Service 2002). It appears to be of South American or New World origin (Haselwood and Motter 1966, Henty and Pritchard 1975, Raintree 2002).

Ecology.—In Cuba, coffee senna is said to be most common in fertile, cultivated areas (Sánchez and Uranga 1993) and in Nicaragua it also grows in disturbed sites (particularly fertile ones), river overflow areas, meadows, and forests from near sea level to 900 m in elevation (Stevens and others 2001). The species occurs on pinelands in Florida and grows better on near-neutral soils than acid (pH 4.7) soils (Long and Lakela 1976). Coffee senna grows in moist areas (mean annual rainfall from about 1000 to 2200 mm) in Puerto Rico.

Reproduction.—Coffee senna flowers and fruits throughout the year or seasonally, depending on rainfall and cold seasons. Seeds collected in Puerto Rico averaged 0.0158 $\pm$ 0.0002 g/seed or 63,000 seeds/kg. Some 95 percent of scarified seeds sown in potting mix germinated between 5 and 36 days after sowing (author's observation). Scarification is necessary for good seed germination (Institute of Food and Agricultural Sciences 2002). Mechanical scarification, acid treatment, and immersing in boiling water all worked well, giving 82 to 100 percent germination (Demel and Teketay 1996). The seeds are dispersed by grazing animals (Sánchez and Uranga 1993).

Growth and Management.—In seasonally cold

or dry climates, the life cycle of coffee senna is complete in 6 to 9 months, but in warm, continually moist areas plants may last a full year or grow through the second year. Perhaps in Brazil where extraordinary heights are reached, the species may live a third or fourth year. Growth is moderately rapid. Plants add 0.5 to 1.5 m during the first season. Although coffee senna is planted to yield medicinal materials (Barbadine 2002), because of its short life and weedy potential, it is not advisable to plant it in wildlands. The species can be controlled with broadleaf herbicides (Henty and Prichard 1975).

Benefits and Detriments.—As the name implies, the seeds of coffee senna are roasted and used as a coffee substitute (Guzmán 1975). The plant's tissues contain a host of phytoactive chemicals that may support its numerous applications in folk medicine. Extracts or powdered leaves are used as an analgesic, antibacterial, anti-hepatotoxic, antifungal, anti-inflammatory, antiseptic, antispasmodic, antiparasitic, antiviral, carminative, diaphoretic, emmenagogue, febrifuge, insecticidal, immunostimulant, laxative, purgative, sudorific, and vermifuge. Several of these effects have been demonstrated in laboratory and clinical tests (Raintree 2002). While coffee senna can be a weed of cultivated fields and plantations, it is principally a problem because it accumulates in heavily-grazed pastures (Henty and Pritchard 1975). The foliage is poisonous and generally avoided by livestock (Stevens and others 2001). Ingestion of large amounts of seeds has been implicated in deaths of cows, horses, and goats (Raintree 2002). Poisoning of pigs fed coffee senna seeds resulted in muscle necrosis (Timm and Riet-Correa 1997).

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