***Waltheria indica* L.** sleepy morning
STERCULIACEAE

Synonyms: *Waltheria americana* L.
Waltheria elliptica Cav.

General Description.—Sleepy morning is also known as velvet leaf, marsh-mallow, monkey bush, boater bush, leather coat, buff coat, basora prieta, malvavisco, hierba de soldado, guimauve, mauve-gris, moto-branco, hioloa, fulutafu, kafaki, and many other names (Haselwood and Motter 1966, Howard 1989, Liogier 1994, Burkill 2000). It is a short-lived shrub or subshrub sometimes reaching 2 m in height and 2 cm in stem diameter. Sleepy morning develops a weak taproot, robust lateral roots, and abundant fine roots. The roots are brown and flexible. This shrub usually has a single, strong stem emerging from the ground, but frequently branches near the ground. Sleepy morning usually has an upright and somewhat branchy form. However, in some environments, it may grow in a semiprostrate habit. The young stems and leaves are covered with a gray, velvety pubescence. The alternate leaves are narrowly ovate or oblong with a rounded to subcordate base, irregularly serrate edges, and a rounded to acute tip. The petioles are 0.5 to 3.3 cm long and the blades are 2 to 12 cm long and 1 to 7 cm broad. Axillary inflorescences are usually dense glomerules that contain fragrant, yellow to orange flowers. Each 2-mm capsule holds one tiny, black, obovoid seed (Howard 1989, Liogier 1994, Tropilab, Inc. 2001).

Range.—Sleepy morning now grows throughout the tropics and warmer subtropics (Liogier 1994). It apparently naturalized in Hawaii soon after the arrival of nonnative colonists (Haselwood and Motter 1966). Howard (1989) indicates that the species is native to the New World where it occurs from Florida and Texas to Brazil (Dick 2001, Nelson 1996, Texas A & M University 2001).

Ecology.—Sleepy morning grows in disturbed dry and well drained, moist habitat. In Puerto Rico, the species occupies areas that receive from 750 to about 1800 mm of annual precipitation from near sea level to more than 400 m of elevation. The species grows on sites up to 1,220 m in elevation in Hawaii (University of Hawaii 2001). It colonized a wide variety of soils in areas with igneous, metamorphic (including ultramafics) and sedimentary (including limestone) rocks. The species may be found on old fields, construction sites, roadsides, burned forest and grasslands, and stream overflow areas in Puerto Rico. In Florida, it grows in open pinelands, hammocks, and disturbed sites (Long and Lakela 1976). It is intolerant of shade and will not survive under a closed tree canopy and cannot compete with grass in dense swards. It withstands drought, salt spray, and mildly salty soils.

Reproduction.—Sleepy morning plants begin flowering at about 6 months of age and bloom more or less continuously for the rest of their lives. A collection of seeds made in Puerto Rico averaged 0.0013 g/seed or 764,000 seeds/kg. These seeds were sown without any pretreatment

on filter paper and after 16 weeks yielded 13 percent germination. Reproduction is by seeds. The seeds are disbursed by water, agricultural equipment (Sánchez and Uranga 1993), and grazing animals. Seedlings are relatively common in disturbed habitat.

Growth and Management.—Sleepy morning plants in Puerto Rico live for 1 or 2 and occasionally 3 years. Death usually occurs during the dry season. Perennial growth is more likely in continuously moist habitat. Stands of sleepy morning in agricultural plantations can be controlled by cultivation and probably by broadleaf herbicides.

Benefits and Detriments.—In the Turks and Caicos Islands, sleepy morning is used to make an herb tea (Wood 2001). The plant produces a fiber that was formerly used for making cords, sacking, padding, and sandals (Guzmán 1975). Durawhite, an extract of sleepy morning, is used in a commercial cosmetic for its ability to inhibit melanin synthesis and whiten the skin (Janssen Cosmeceutical Care 2001). The plant contains steroid derivatives and alkaloids of the adouetine group that perhaps make it physiologically active. Various extracts are used as standard febrifugal, purgative, emollient, tonic, analgesic, and astringent herbal medicines in Africa (Burkill 2000). In Hawaii, the root is chewed to relieve sore throat (Neal 1965). Stems are used as a chew stick, and extracts of the plant are used as an eye bath and a remedy for hemoptysis in Panama (Agricultural Research Service 2001). Seeds are sold commercially, and the species is cultivated in gardens as a medicinal plant. The plant is browsed by all types of livestock, especially when young (Burkill 2000). Sleepy morning forage in a Mozambique valley during the rainy season contained 6.4 percent crude protein, 0.12 percent phosphorus, and 0.51 percent calcium (Faftine and others 2001). Sleepy morning is considered a weed in much of its range, but it is seldom aggressive enough to be a major problem (Sánchez and Uranga 1993). It is host for a number of insects harmful to agricultural crops (Centro de Desarrollo de Agronegocios 2000, Lastres 2000, Sánchez and Uranga 1993).

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