

***Phoradendron quadrangulare* (Kunth) Griseb.**
VISCACEAE (sometimes placed in LORANTHACEAE)

guacimilla de canario

Synonyms: *Phoradendron randiae* (Bello) Britt.
Loranthus quadrangularis Kunth in Humb.
Viscum quadrangulare (Kunth) DC.
Phoradendron rubrum sensu Griseb.
Viscum trigonum D. Dietr.



General Description.—Guacimilla de canario is an evergreen, epiparasitic shrub that obtains water, minerals, and support from its tree hosts and produces stems up to 1 m long and 1 cm thick. The woody stems are much branched, brown, and lightly furrowed in their lower parts with a swelling at the point of attachment to the host. The bark of branches and twigs is green. The young branches especially are square or rhombic in cross section. The stem wood is light-colored and brittle. The dull green leaves have a leathery-fleshy texture. They are linear, lanciolate, or oblanciolate with a tapered base and acute to obtuse apex. Inflorescences are small spikes, one to three in number at the leaf axils, and support small flowers. The yellow, globose fruits are 3 to 4 mm in diameter (Howard 1988, Liogier 1985). However, fruits in Costa Rica range from pale yellow to red-orange (Missouri Botanical Garden 2002). Within the pigmented skin is a layer of sticky jelly and a flat, green seed with longitudinal striations (author's observations).

Range.—Guacimilla de canario is native to Central America, South America, and the West Indies (Howard 1988, Liogier 1985).

Ecology.—Guacimilla de canario colonizes a number of tree species, especially *Guazuma ulmifolia* Lam. in Puerto Rico (author's observation). The former species, as well as *Amphitecna latifolia* (Mill.) A.H. Gentry, *Cordia stellifera* I.M. Johst., *Erythrina* sp., *Malvaviscus arboreus* Cav., and *Persea Americana* Miller, are mentioned as hosts in a Costa Rican herbarium collection (Missouri Botanical Garden 2002). Most of the guacimilla de canario plants occur in the mid-crown of the affected trees. After the parasite becomes general throughout a tree crown (a process that takes many years), trees are weakened and sometimes die as a result. More often, parasitized trees die of other causes or old age before they succumb to the parasite. Trees in forest, rangeland, farmland, roadside, and cities are attacked. Guacimilla de canario grows at lower and middle elevations in Puerto Rico (Liogier 1985), that is, from sea level to about 600 m. These areas range from 750 to about 2400 mm of annual precipitation. In Ecuador, the plant may be found from near sea level to 1,000 m in elevation (Jorgensen and León-Yáñez 1999).

Reproduction.—Fruits collected in Puerto Rico weighed an average of 0.0294 ± 0.0004 g/fruit. Seeds cleaned from those fruits weighed (air-dried) an average of 0.0017 ± 0.0000 g/seed or 600,000 seeds/kg. Sown without any pretreatment on moist filter paper, 59 percent germinated within 35 days of sowing. After 4 days, mesoscopic roots emerged followed at 17 days by a shoot that extended hypogenally (author's observation). Birds transport the seeds (the fruits are sticky and adhere to their feet or beaks) to new trees or stands. After fruits stuck to the bark of a suitable host tree, they require a rainy period long enough to allow the roots of the germinating seed to penetrate the phloem of the host, or the seed or plantlet will desiccate. Once established in a new tree, the guacimilla de canario spreads by seeds within the crown of the host tree. It does not

spread vegetatively.

Growth and Management.—The growth rate of guacimilla de canario is not known. Although it is a parasite and does harm its hosts, the plant takes many years to become sufficiently abundant to seriously weaken a host tree. *Guazuma ulmifolia* and most of the other hosts are not used as ornamentals and are not commercially valuable. If control is desired, probably the best method is to clip the guacimilla de canario plants from the limbs each year or until they die. This will prevent it from bearing fruit and spreading within the tree. Alternately, one may prune out the infected limbs of the parasitized tree.

Benefits and Detriments.—Guacimilla de canario contributes in a minor way to biodiversity, to tree canopy density, and to biomass production. It furnishes fruits for wildlife food. On the other hand, a few trees/km² are attacked, some are weakened, and an occasional tree dies as a result. Parasitized trees are often unsightly.

References

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John K. Francis, Research Forester, U.S. Department of Agriculture, Forest Service, International Institute of Tropical Forestry, Jardín Botánico Sur, 1201 Calle Ceiba, San Juan PR 00926-1119, in cooperation with the University of Puerto Rico, Río Piedras, PR 00936-4984