Tropical Tree
SEED MANUAL

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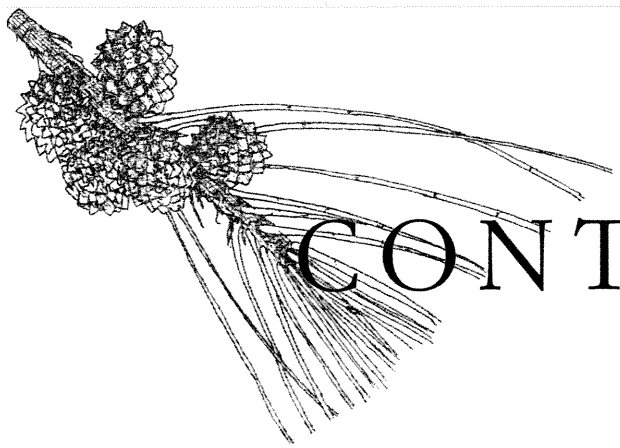
Forest Service



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Diphysa robinioides Benth.

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FABACEAE (BEAN FAMILY)

Diphysa americana (Mill.) *M. Sousa* (Montero Mata 1995)

Guachepilí, guachepilín, guachipilín, palo amarillo (Montero Mata 1995, Witsberger and others 1982)

Diphysa robinioides is distributed from southern Mexico to Panamá and Venezuela (Witsberger and others 1982).

Diphysa robinioides is a deciduous tree 6 to 22 m in height and 30 to 50 cm d.b.h. Usually double-stemmed, the tree has a sparse, irregular crown and bark with deep vertical fissures. *Diphysa robinioides'* alternate, odd, pinnately compound leaves are 3 to 15 cm long. Leaves have from 5 to 27 leaflets. Leaflets are smooth with rounded apex and have a strong smell when rubbed. In Guatemala, the species grows from sea level to 2500 m in diverse soils and climates.

The wood of *Diphysa robinioides* is used for firewood (Guzman 1980) with a specific gravity of 0.965 and high calorific properties (18,810 kj per kg) (Montero Mata 1995). It is an attractive ornamental with brilliant yellow flowers. The heartwood produces a yellow dye. In some Central American countries the trees are used for living fences, posts, or windbreaks. In Nicaragua the species is planted in coffee plantations for shade and timber (Natural Resources Defense Council 1996). The cortex is used for home remedies (González Ayala 1994), especially for treating gastrointestinal diseases (Caceres and others 1990). The foliage is a good source of green manure and sprouts easily after pruning (Montero Mata 1995). Livestock and rabbits feed on the leaves of young and adult trees. Finally, *D. robinioides* is a nitrogen-fixing tree (Allen and Allen 1981, Halliday 1984, Navarrete-Tindall and others 1996) which can be used in agroforestry systems.

Diphysa robinioides flowers in November and fruits from December to May (Witsberger and others 1982). Flowers are yellow, 1.5 cm long, 1 cm wide, and borne in racemes 4 to 7 cm long (Witsberger and others 1982). The indehiscent fruits are inflated oblong pods, forming two bladders on each side of the pod with up to six seeds.

Mature fruits are collected from the ground after they fall or directly from the tree. Seeds are extracted by hand from the fruit and stored under dry and cool conditions (5 °C). Seeds average approximately 50,000 per kg, but 20 to 30 percent of the weight may be broken seeds. Germination is high—91 to 98 percent—without the need for scarification treatments (Montero Mata 1995, Navarrete-Tindall and others 1996).

In nursery production, two seeds are planted in pots or polyethylene black bags in a sunny location, thinned to one seedling, and watered daily. Seedlings grow fast under temperatures between 20 to 30 °C, especially when rhizobial bacteria are present in the soil. Six-month-old seedlings had an average height of 74 cm and 1.4 cm basal stem diameter 4 months after outplanting (Navarrete-Tindall and Van Sambeek, unpublished data). *Diphysa robinioides* is also propagated from large cuttings.

ADDITIONAL INFORMATION

Future research should include progeny and pruning studies to produce fewer-branched individuals for timber production. Studies on root development will help to determine the tree's potential as an ornamental in urban areas.