Eucalyptus urophylla S.T. Blake

V.M. NIETO and J. RODRIGUEZ
Corporacion Nacional de Investigacion of Forestal
Santafé de Bogotá, Colombia

MYRTACEAE (MYRTLE FAMILY)

No synonyms

Eucalipto

Eucalyptus urophylla is very similar to *E. alba*. It is a fast-growing tree that can reach 15 to 20 m in height and 40 cm d.b.h. The shaft is well shaped. The bark is smooth, with cream or pink spots; the surface is covered by a floury substance. The young leaves are petiolate, ovoid-rounded to elongated, and alternate. In adult trees, the leaves are rather lanceolate. Although the species tolerates chemically poor soils, it must be planted in soils having a loose texture. It does not tolerate very clayey soils with a shallow phreatic layer. It grows better in soils that remain wet during the dry season (Lama 1986). *Eucalyptus urophylla* grows at elevations from sea level to 1200 m, with an average annual temperature of 24 to 28 ^{O}C and annual precipitation of 2000 to 3000 mm. It grows in the vegetal formations of the dry Tropical forest (bs-T) and wet Tropical forest (bh-T) (Endo 1992).

The wood is hard and does not split easily. It is used primarily for pulp and boards. It is also used as electrical transmission poles, long-lasting posts, and pilings, in light and heavy construction, cabinet-making and carpentry; and for plywood and agglomerate boards. It is useful in protecting river banks and providing shade. It is also a honey-producing species with good properties. Because the species has no major edaphic requirements, it is appropriate for reforestation, both in flooded soils and in dry soils of low tropical lands.

The fruits are found in rosettes of five to seven. They are separated from the branches by hand or with scissors and are placed in paper bags. They must be kept well ventilated to prevent attacks by fungi and they should not be exposed to high temperatures.

The weight of 1,000 viable seeds ranges from 1.4 to 2.5 g. Viable seeds average 210 to 650 per kg. The ripe seeds can be kept viable for 5 to 20 years if they are stored in sealed containers at a low humidity content (8 to 10 percent) and a temperature of 3 to 5 ^{O}C. Before storing, the seeds must be treated for protection against insects and fungi.

Most *Eucalyptus* seeds germinate well without pregermination treatment, but some species require cold and humid stratification to break latency. This treatment consists of moistening the seed and placing it in a cold room (3 to 5 ^{O}C) for 2 to 10 weeks. The appropriate temperature for germination is 20 ^{O}C. Complete germination occurs in 10 to 21 days, depending on the species. About 108 to 240 plantules are obtained from 1 g of seed in nurseries.

Seeds can be scattered or planted in furrows in seedbeds prepared with a normal substrate (soil and sand 1:1), previously moistened, and provided with shade at the beginning of development. The plantules are dibbled when they reach approximately 3 cm in height. Because the roots must be in clods of earth, dibbling is done to the bags. At the beginning, the planting material must be shaded and kept moist; shade and watering are gradually reduced to prepare the plantule for field planting. The plantules are transplanted when they are approximately 25 cm high at 100 to 150 days.

The underbrush must be removed from the planting site. The soil must be treated by totally breaking it up or digging large holes (50 by 50 by 50 cm). Generally, spacing is 2 by 2 m or 3 by 3 m; occasionally, it is greater. Protection against insects is necessary during the entire growing period. In plantations, growth is hindered by attacks from ants (Lama 1986).

Fraxinus uhdei (Wenz.) Lingelsh.

L.A. FOURNIER
Escuela de Biología, Universidad de Costa Rica

OLEACEAE (OLIVE FAMILY)

Franixus americana var. *uhdei* Wenzig, *F. chiapensis* Luncell

Evergreen ash, fresno, shamel ash, tropical ash

Fraxinus uhdei is native to western and southern Mexico, Guatemala, and Honduras. It has been planted as an ornamental in other countries, including Costa Rica, Puerto Rico, and Hawaii.

Fraxinus uhdei is a fast-growing, deciduous tree. It can reach 10 to 20 m in height and 40 to 50 cm d.bh., and very old trees can be larger. The bark is brown, rough, and furrowed, and the crown is pyramidal. The inner bark of *Fraxinus uhdei* is whitish and bitter. The twigs are green, brown when older, and hairless except when young, with paired half-round leaf scars; the foliage is pale green. Leaves are opposite, odd-pinnate, without stipules, 15 to 30 cm long, and composed of 5 to 7 leaflets paired along a slender stalk. Leaflets are serrulate, 5 to 10 cm long, 2 to 5 cm wide, long-pointed at the apex, short-pointed or blunt at the base, finely saw-toothed on the edges, and slightly thickened; the upper surface is green and hairless; the lower surface light green with small hairs along the mid-vein. The species grows naturally in moist, wet forests and good volcanic soils, at elevations ranging from 500 to 1500 m, with an average annual rainfall of 1800 to 3000 mm and an average temperature of 18 to 23 °C.

The heartwood is brown and is suitable for timber production. It is used for baseball bats, paddles, and tool handles.

The flowers are very small, greenish in axillary panicles, and dioecious; the panicles are located at the sides of the twig, much branched, and 12 to 20 cm. The fruit is a samara with a small, nearly cylindrical, dark brown body, 0.75 cm long at the base, with a light brown wing 2.5 to 3 long and 5 mm wide extending down to about the middle of the body and slightly notched at the apex.

Trujillo (1996a) reported that seeds can be kept for several months in glass containers in hermetic conditions at 4 °C with a moisture content of 7 to 10 percent.

Trees planted artificially are obtained from seedlings of natural regeneration. Some of the planted trees in Puerto Rico were heavily attacked by peach aphis (*Aulacaspis pentagona*) (Little and Wadsworth 1974). The insect *Phassus triangularis* (Lep., Hepiolidae) has been observed boring the piths of this tree (Arguedas and others 1993).


1cm