Caryodendron orinocense H. Karst.

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

EUPHORBIACEAE (SPURGE FAMILY)

Dioicia tetrandia L.

Cacay, caquetá, castaño, inchi, meta, putumayo, tacay

Caryodendron orinocense is a slow-growing tree that reaches 25 m in height and 30 cm d.b.h. The trunk is long and slightly grooved; the bark is thin and grayish, dark green, or brown. The leaves are alternate, glabrous, dark green on the right side and light green on the back side, narrowly elliptical or oval with a whole margin 12 to 15 cm long by 4 to 10 cm wide. The petiole is glabrous, grooved on the upper surface, widened at the extremes, and 1.5 to 5 cm long. The tree grows in steep topography both on the peaks and in the depressions. The phreatic level does not have a major influence on the growth and yield of *C. orinocense*. Good yields have been observed in flooded soils and in fertile lowlands, but the tree also grows to great heights on the sides of mountains. The tree grows in shallow soils with a thick texture to moderately deep soils. It also grows in loose sandy textures. The species is found in soils of low terraces with a medium to high content of interchangeable bases and a very low aluminum content. It does not endure soils with hydric deficiency. The capability of cationic exchange (CIC) ranges from 7.5 to 1.9 milliequivalents per 100 g of soil (1.9 is very high). Furthermore, the tree grows well in high terrace soils, which are very limited due to acidity, high content of interchangeable aluminum, and poor exchange bases, saturation, and phosphorus. The species is located in the transition between the wet Tropical forest (bh-T) and the very wet Tropical forest (bmh-T). The wet Tropical forest generally has an average temperature of more than 24 °C and an average annual precipitation between 2000 and 4000 mm. The very wet Tropical forest has an average temperature of more than 24 °C and an average annual precipitation between 4000 and 8000 mm (Martinez 1996). *Caryodendron orinocense* is very susceptible to fire and does not endure prolonged droughts.

The wood is used primarily as firewood and charcoal. The oil is extracted from the fruits or seeds, thus the species could be cataloged as a successor in the production of olive oil. The seeds are toasted and consumed. Although the wood is not very durable and does not finish well, it is used in interior carpentry in Putumayo and Meta, Colombia.

The tree is dioecious; the masculine flowers have a trifoliate calyx with oval sepals, pointed and membranous. The feminine flowers are sessile, forming a bracteate terminal sprig; after fertilization they lean on a somewhat elongated pedicel with small bracts in a wide triangle. The fruit is globose-oblong, 6 to 5 cm long by 4 to 5 cm wide, and dehiscent, with a green exocarp and three ligneous carpels with a small apical appendage, each one containing only one seed. One kg of fruit contains 42 to 46 seeds (without pericarp). The seeds have a large, white endosperm with a central straight embryo. The testa is hard and grayish or coffee brown in color, and is covered with a layer of wax; the tegument is membranous and wrinkled. Seeds average 275 to 325 per kg. The weight of 1,000 seeds is 3 kg.

The seed has a very short viability period, which makes sowing the species in other regions of the country difficult. It can be stored at 6 ^{o}C without significantly affecting the percentage of germination. If the seeds are dried an additional week before refrigeration the viability period of the seed tends to lengthen.

Fresh seeds germinate quickly; sometimes 75 percent have germinated by the second day and the remainder germinate in 5 days. Seeds that have been stored for several weeks and are normally much drier, take up to 15 days to germinate.

For best germination the seeds should be planted in wet sand in deep shade, because the sun dries up the projecting radicle and the cotyledons. The seeds can be extracted from the pit and planted alone, or the pit containing the three seeds can be planted. When the pit is planted, the three plantules must be separated at the moment of transplanting. Transplanting must occur approximately 4 weeks after the seeds are

planted. During the 6 to 8 months in the nursery, shade must be gradually decreased (Van Dijk 1979).

The distance between trees must provide adequate space for development. The trees are usually planted at distances of 8 by 8 m or 9 by 9 m. After cutting the masculine trees, distances become 12 to 13 m. Trees that produce a lot of seeds must be pruned to prevent the branches from breaking under the weight. Attacks by large red ants can cause the death of planted trees or trees in the nursery. Coleopteran eat the medulla of the branches.


2cm