Acacia melanoxylon R. Br.

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FABACEAE (BEAN FAMILY)

No synonyms

Acacia japonesa, acacia negra

Acacia melanoxylon is a fast-growing tree that can reach 15 m in height and 20 cm d.b.h. The species grows in loose clayey, loose sandy, or sandy textured soils. It endures slightly acid soils with a tendency toward neutrality and requires good drainage and deep soils. It grows at elevations of 1800 to 3000 m with a minimum temperature of 3 ^{o}C, a maximum temperature of 22 ^{o}C, and an annual average of 15 ^{o}C, with annual precipitation ranging from 900 to 2700 mm. The tree is moderately resistant to frost and tolerates shade during its first years. It grows in the vegetal formations of the Low Mountainous dry forest (bs-MB), Low Mountainous wet forest (bh-MB), and Low Mountainous very wet forest (bmh-MB) (Bartholomaus and others 1990).

Because *A. melanoxylon* is not considered a timber-yielding species, its physical and mechanical properties are unknown. In Colombia, it is used for round wood such as fence posts and firewood, and in the manufacturing of charcoal. It has also been used for furniture and drawers, and occasionally for tool handles, veneer, and plywood. The fruits and especially the wax they produce have been used industrially. As a nitrogen-fixing species, it is fit for the recovery of soils. Its physical traits make it useful as an ornamental or shade tree or in hedges. It can also be used as forage.

The fruits are gathered when they become yellow. When the fruits have dried in the sun for 1 day, the seeds are extracted. Seeds average 56,805 per kg. Seeds are stored at 4 ^{o}C in hermetic containers and can be kept for up to 7 years.

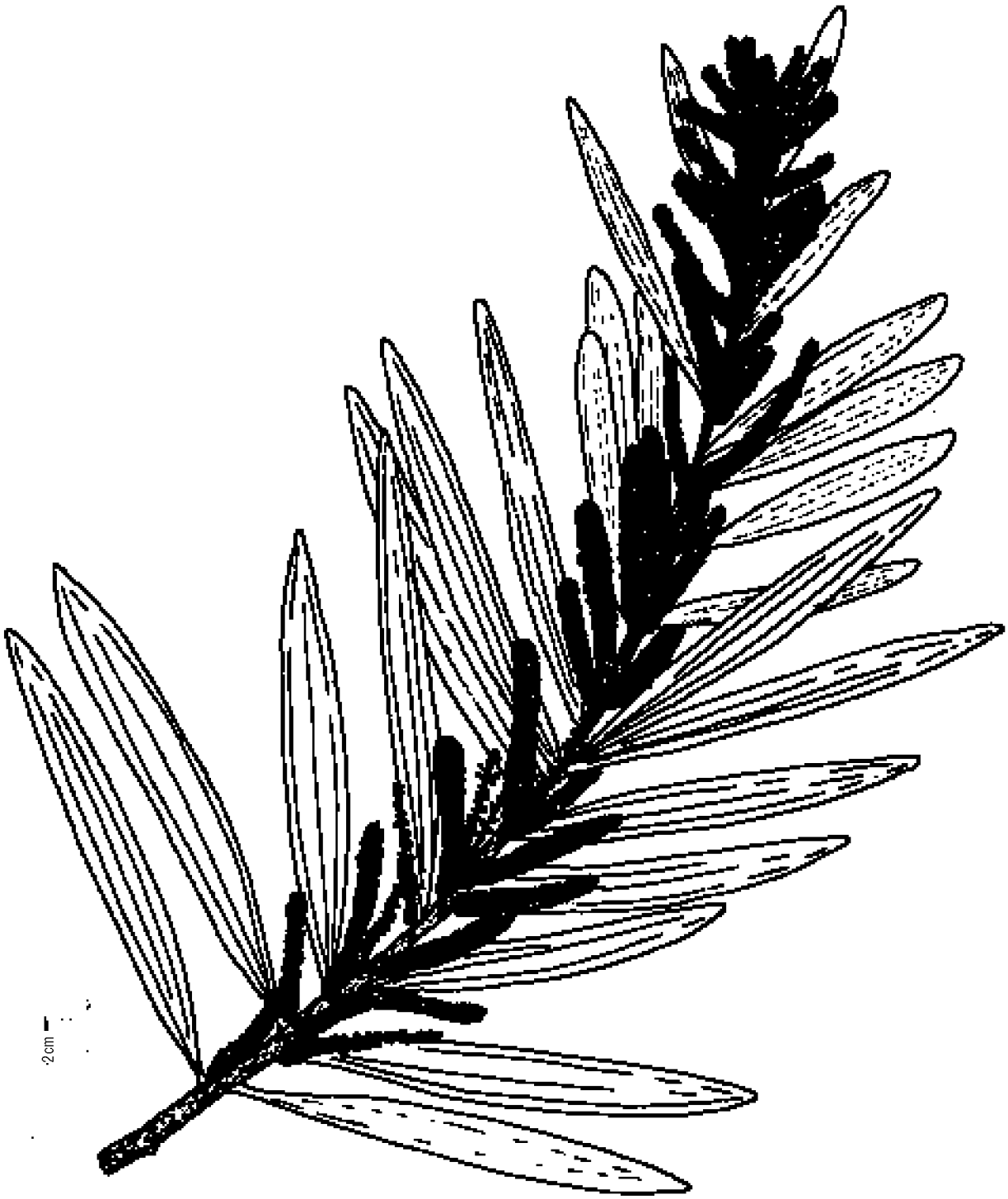
The appropriate pregermination treatment involves mechanical scarification with sandpaper until the seeds lose their shine and appear completely porous. A secondary pregermination treatment consists of submerging the seeds in boiling water for 1 minute and leaving them in the same water for 24 hours. Another pregermination treatment consists of submerging the seeds in concentrated sulfuric acid for 20 minutes. Germination in the laboratory occurs in 6 to 25 days.

About 25,000 plantules are obtained from 1 kg of seed in nurseries (Montero and Estevez 1983). The seeds can be sowed in a definitive place or in seedbeds at 1 cm deep and 1 cm apart from each other, in rows 10 cm apart. The plantules are transplanted when they reach 20 cm. The recommended substrate consists of two parts sand and one part soil, which must be disinfected before planting the seeds. Seeds should be sown deep enough to prevent uncovering when watered, but they should not be embedded. The plantules are lifted when they are 3 to 5 cm tall (Trujillo 1983).

If planting is used to recover soils, the vegetation must be removed in a 50 cm diameter circle around the planting hole. When planting for the production of wood or fruits, the ground must be clear of underbrush. Generally, the trees are planted at minimum distances of 2 by 2 m, with clods of soil. Direct planting can also be used. The species is often planted with the *Pinus radiata* C. Don species to improve the soil. During the first stages of development the trees need to be free from vegetative competition, which requires clearing of the ground at least once or twice a year (Paloma Lozano 1994).

ADDITIONAL INFORMATION

Ants cause great damage to *A. melanoxylon*. The species is also susceptible to damage caused by fungal attacks by *Armillaria* sp. In very wet soils, the roots rot. The trees are easily uprooted by strong winds. These trees should not be planted on avenues or foregardens because they send up shoots and their roots spread.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