Erythrina fusca Lour.

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FABACEAE (BEAN FAMILY)

Erythrina glauca Willd, *Erythrina caffra*, *Erythrina atrosanguinea*

Agua inmortal, aheyote, amasisa, anahuco, bucare, bucare anauco, búcaro, bucayo, cachimbo, canatagallo, galleto, guiliqueme, maté bravo, maté manso, orornoque, palo prieto, piñon francés, pito, poró, poró blanco, saibo, swamp inmortalle, water inmortalle (Acero 1985, Russo 1993, Sánchez and others 1993)

Erythrina fusca is one of 117 species in the genus. With seeds that float and can be dispersed by oceanic currents, it grows in both the Old and New Worlds. It is amply distributed along the coasts and rivers in the Neotropics, Asia, Oceania, Madagascar, Mascarene, and Africa (Neill 1993, Russo 1993). Seeds are also dispersed to the middle of savannas by large birds and cattle. These animals drink near the trees during periods of rain, dispersing the seeds to other areas during periods of drought. In tropical America, *E. fusca* is indigenous from Guatemala to Peru, Bolivia, Brazil, and Venezuela (Little and others cited by Sánchez and others 1993). It has also been reported in Mexico (Holder and Poveda cited by Russo 1993).

Erythrina fusca is a free-growing tree that can reach 20 m in height. The stems of young *E. fusca* have sharp thorns that become warts or very thick thorns in adult trees. Its leaves are trifoliolate with green folioles on the front and whitish-green folioles on the back, coriaceous or semicoriaceous, ovate with a maximum width of 10 cm and a maximum length of 17 cm. Some authors cite that the tree is deciduous. In Colombia it is considered an evergreen species. In droughts a slight defoliation can be observed, but as soon as flowering begins new leaves appear (Sánchez and others 1993). The species grows in soils either subject to flooding or with shallow phreatic levels. Patches of this species are found in swamps and in areas with periods of rain and drought. *Erythrina fusca* is generally associated with clayey soils, with a neutral pH, and with high saturation of cations, but in some areas it grows very well in ultisol soils with an acid pH and fairly saturated.

Erythrina fusca is used as an ornamental in Costa Rica, Mexico, Venezuela, and Brazil. In Colombia and Costa Rica the tree is used as shade in coffee and cacao plantations and to form living fenceposts. It is also used in agroforestry systems, especially in those areas with extreme climates, high phreatic levels, and difficult soils. In Colombia the generally weak wood is used to make drawers (Acero 1985). The flowers are used as food in Guatemala (Blohm cited by Sánchez and others 1993) and in northeastern Colombia. In Latin America the flowers are used as an ingredient in tortillas, soups, and salads. According to Hasting (cited by Sánchez and others 1993) it is used as a poison in fishing because it possesses at least three alkaloids of phylum curare. In Costa Rica *E. fusca* was used as green manure in parcels of corn and beans at a rate of 16 tons per ha of fresh matter in the first year and the first half of the second year, and crop productivity was good when compared to other treatments (Lebuf 1993). Furthermore, a mulch of *E. fusca* in the soil effected a decrease in runoff and loss of soil compared to other treatments.

Another test in Colombia showed that the productivity of dry biomass of *E. fusca* in monoculture at 2 by 2 spacing and 2,500 trees per ha reached only 2.6 tons per ha, while *Gliricida sepium* (Jacq.) Kunth ex Walp. under the same conditions reached 13.0 tons per ha. Although the content of nitrogen in *E. fusca* (27.4 to 31 g per k) is lower than those of other forages (*E. poeppigiana* (Walp.) O.F. Cook: 37.2 g per k, *Gliricidia sepium*: 39.0 g per k), *E. fusca* does not lose its leaves in the dry season, thus providing forage throughout the year.

In another test, *E. fusca* showed a 90 percent survival in acid soils (pH 4.3) with a saturation of A1 of 80 percent. When compared to other species inherent to the region (*Albregia saman* and *Delonix regia* (Bojer ex Hook.) Raf.), which have 100 percent survival, *E. fusca* grew better and surpassed them in tolerance against attacks by ants. In spite of these adverse conditions, *E. fusca* retained its leaves (Sánchez and others 1993).

The tree's salmon-colored inflorescence has complete flowers that group in hanging racemes. When the collapsed pods ripen, they twist on their central axes, freeing coffee-colored seeds with black longitudinal stripes. *Erythrina fusca* seeds average about 2,250 per kg.

Most of the *Erythrina* species are easily disseminated through seeds and through cuttings. The soft seedcoat facilitates germination and if the seeds are submerged for 24 hours in water at room temperature, germination is accelerated. Tests in seedbeds showed germination rates of 95 percent for *E. fusca* using seeds stored for 1 year in a cold chamber at 5 °C with a relative humidity of 30 to 40 percent (Viguez and Camacho 1993) or for fresh seeds planted in a medium made up to 50 percent soil and 50 percent sand (Sánchez and others 1993).

Vegetative dissemination is very successful with 2-year-old cuttings 1.5 m long. A 90 percent success rate in the establishment of *E. fusca* has been reported when incisions 20 to 40 cm from the bottom cut are made to stimulate root production (Viguez and Camacho 1993). The cuttings of *E. fusca* may be planted immediately or stored for 2 weeks in a cold room or shaded place. Storage must be vertical.

Even though a complete study of diseases has not been done, a rust whose causing agent is *Dicheirinia binata* has been documented (Figueiredo and others cited by Sánchez and others 1993).