Erythrina berteroana

Urban

Fabaceae - Papilionoideae

LOCAL NAMES
English (coral bean); Spanish (poro de cerca,pito,pinñón de España,pernilla de casa,machetico,gallito,elequeme,brucal,amapola de cerca)

BOTANIC DESCRIPTION
Erythrina berteroana is a tree to 10 m tall, trunk to 48 cm dbh, crown low, spreading, profusely branched; bark pale, smooth, with many or few broad and conical spines; branchlets smooth, lustrous, spines occasional, pyramidal, to 0.6 cm long, often reflexed at the apex.

Leaves alternate, trifoliate, 10-35 cm long, the leaflets ovate or deltoid, 5-17 cm long, 4-20 cm wide, margin entire, shortly acute or acuminate at the apex; stalks swollen at the base, 7.5-15 cm; blades usually coated with whitish bloom beneath.

Flowers pinkish to red, appearing with the leaves, in terminal racemes, 12.5-25 cm long; each flower 5-10 cm long, embracing 10 stamens, the anthers protruding; ovary stalked, pubescent. Calyx green, tubular; corolla 5-petalled, 7.5 cm long, standard narrow with 3-4 very small petals hidden within.

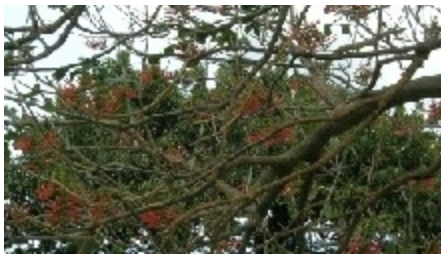
Pod dark brown, semi-woody, curved, moniliform, 10-30 cm long, 1-1.5 cm broad, the beak 2-4 cm long, the several seeds.

Seed 5 mm long, oblongoid, bright orange red, with a conspicuous black hilum.

Erythrina comes from the Greek word ‘eruthros’-red, alluding to the showy red flowers of the Erythrina species.

BIOLOGY
E. berteroana is pollinated by humming birds, Heliomaster longirostris being the principal pollinator.

Flowers at Makawao, Maui, Hawaii. (Forest & Kim Starr (USGS))



Flowers at Makawao, Maui, Hawaii. (Forest & Kim Starr (USGS))

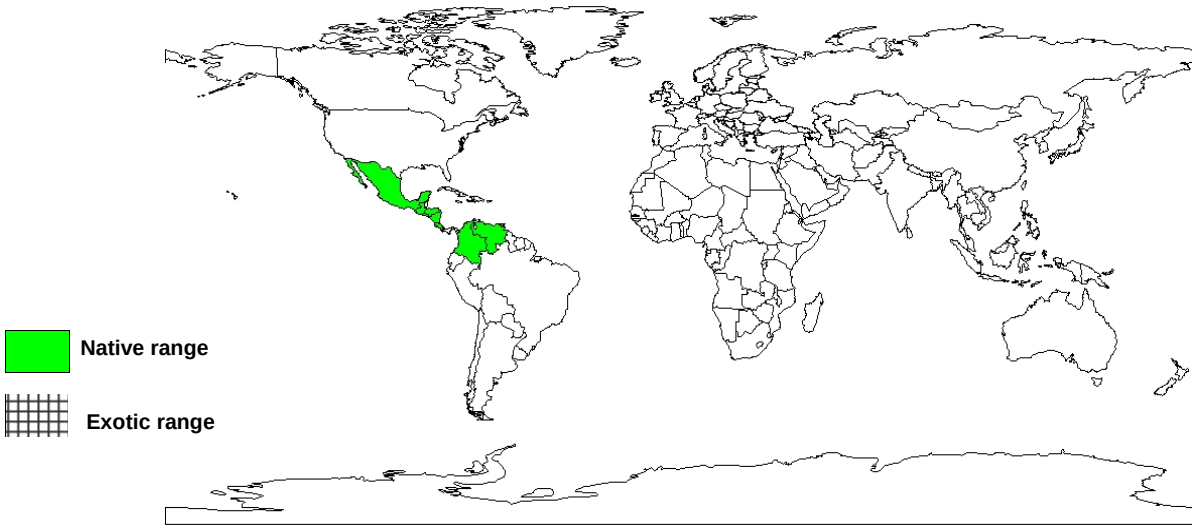
Habit at Makawao, Maui, Hawaii. (Forest & Kim Starr (USGS))

ECOLOGY
This is a tree of the tropical and subtropical dry to moist forests. E. berteroana is by far the most common lowland species in Central America drier regions.

BIOPHYSICAL LIMITS
Altitude: 0-2 000 m
Mean annual temperature: 20-28 deg C
Mean annual rainfall: 1 000-4 000 mm
Soil type: Coral bean grows on soils with pH 6-8.

DOCUMENTED SPECIES DISTRIBUTION

Native: Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Venezuela
Exotic: Cuba, Dominican Republic, Haiti, Panama, Puerto Rico, Virgin Islands (US)



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS
Food: Young branches, tender glossy, green twigs, immature racemes and unopened flowers are cooked as a vegetable. They are marketed fresh or frozen.

Fodder: Young branches and immature leaves are eaten by cattle and rabbits.

Fuel: The tree is used as fuel in Puerto Rico.

Timber: Wood is white to yellow, lightweight with a specific gravity of about 0.25. It is used as a substitute for cork when dry, and also for carving religious objects and toys.

Tannin or dyestuff: Bark yields a yellow dye used on fabrics.

Poison: Pito seeds contain toxic alkaloid which are likened to curare (Strychnos toxifera) in action. Crushed branches are used as fish intoxicant. Bark is used to poison dogs and wild animals.

Medicine: Stem bark contains a prenylated flavonone which has anti-fungal activity against Cladosporium cucumerinum. Flower extract is used as a sedative, for treating nervousness, hemorrhages and dysentery. Leaves and flowers have a soporific effect and are used to induce deep, relaxing sleep. Reported to be narcotic, piscicidal and soporific, coral bean is a folk remedy for dysmenorrhea and other female ailments.

Other products: Alkaloids present in seeds include: erysodine, erysopine, erysothiopine, erysothiorine, a- and ß–erythroidine and hypaphorine. Wood contains a- and ß–erythroidine. Seeds are used in necklaces, bracelets and novelties.

SERVICES
Erosion control: The tree is planted for erosion control.

Shade or shelter: E. berteroana is planted as a shade tree in coffee plantations and pastures.

Nitrogen fixing: It is nitrogen fixing.

Soil improver: E. berteroana mulch has been shown to result in better phosphorus balances, higher microfauna populations and increased crops yield.

Ornamental: The living fence has considerable aesthetic value.

Boundary or barrier or support: It is planted as live posts, fence and live supports for yams (Dioscorea alata) and chayote (Sechium edule).

Intercropping: The species is used in alley cropping systems.

TREE MANAGEMENT
Regular pruning is the key to successful management whether for fodder production, mulch or new stakes. Pruning frequency depends on the end use, for the most edible biomass, pruning is best every 6 months, and 1 year for woody biomass.

PESTS AND DISEASES
Anomala cincta and Phyllophaga menetriesi feed on the leaves, the Membracidae Aethalion reticulatum is associated with piercing-sucking habit. The curculionid Chalcodermus dentipes and the pyralid Terastia meticulosalis are reported as potentially serious pests of seedlings E. berteroana associated with coffee plantations in Costa Rica.

FURTHER READNG

Budowski G, Russo RO and Omar-Russo R. 1985. Productivity of an Erythrina berteroana live fence in Turrialba, Costa Rica. Turrialba. 35(1): 83-86.

Dyer JD and D'Arcy WG. 1980. Erythrina. Annals of the Missouri Botanic Garden. 67(3): 686-697.

Hilje L and Coto D. 1992. Two insects associated with Erythrina spp. in Costa Rica. Boletin Informativo Manejo Integrado de Plagas. 25: 4-5.

Maillard M, Gupta MP and Hostettmann K. 1987. A new antifungal prenylated flavanone from Erythrina berteroana. Planta Medica. 53(6): 563-564.

Morton JF. 1994. Pito (Erythrina berteroana) and chipilin (Crotalaria longirostrata), (Fabaceae), two soporific vegetables of Central America. Economic Botany. 48(2): 130-138.

Neil DA. 1987. Trapliners in the trees: hummingbird pollination of Erythrina Sect. Erythrina (Leguminosae: Papilionoideae). Annals of Missouri Botanic Garden. 74:27-41.

SUGGESTED CITATION

Orwa C, Mutua A , Kindt R , Jamnadass R, Simons A. 2009. Agroforestree Database:a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/af/treedb/)