Hyeronima alchorneoides

Allemão

Euphorbiaceae

urucurana, suradan pilon, pilón

LOCAL NAMES
English (bully tree,suradan pilon); Portuguese (urucurana mirim,urucurana de leite,aricurqua,sangue-de-boi,licurana,mará-goncalo,marconcal,aricurana,muiragonçalo); Spanish (pilón,cargamanto,casaco,nancitón,pantano,zapatero,sangre de toro,trompillo,palo curtidor); Trade name (pilón,suradan pilon,urucurana)

BOTANIC DESCRIPTION
Hyeronima alchorneoides is a tall dioecious tree of lowland tropical forests up to 50 m tall and diameter of 1-1.2 m with multiple, orthotropic branches that form a dense crown. The bole tend to be straight, robust, with very little taper, and un-branched up to a height of 20 m or more. Bark smooth, distinctive deep reddish-brown on the outside, pinkish on the inside and bitter-tasting.

Leaves simple, alternate, petiolate, entire, 5-9 cm long, very variable in shape, with large, leafy stipules and abundant peltate hairs on both surfaces. Young leaves green, later turning yellow and nearly red before shedding.

Flowers small and inconspicuous, yellow-green, zygomorphic, arranged on 5 cm long axillary-branched panicles

Fruit a small, one-seeded drupe, 2.5-5.5 mm in diameter, red or dark purple at maturity

Seed very small, surrounded by the stony endocarp, endosperm oily and large embryo.

H. alchorneoides is one of 36 species in the genus Hyeronima (also known as Hieronyma), all of which are indigenous to Central and South America. The species exhibits a wide range of intra-specific variation. Two of the characters most commonly used to identify the tree include leaf size and the presence or absence of stipules. This varies among individuals and even within the same individual, depending on shoot phenology and age.

BIOLOGY
H. alchorneoides is evergreen with leaves emerging and abscising continuously. The tree is readily recognized in the forest due to the presence of red, pre-senescent leaves in the canopy all year round.

Trees are reproductively mature by the time they are 30 cm in dbh. In many places, flowering and fruiting takes place twice a year. The time of flowering can vary according to rainfall and altitude and sometimes there seems to be no fixed seasonality of the seed production.

In Costa Rica, the trees flower in May-July and sporadically in November-January. The peak of seed production is in January-March. Small insects pollinate the flowers and the species has obligate cross-pollination. The fruits are fleshy, sweet mesocarp, and are dispersed by monkeys and birds

ECOLOGY
H. alchorneoides is a massive canopy emergent tree of lowland humid and very humid mixed tropical forests, which are sometimes waterlogged during the rainy season.

BIOPHYSICAL LIMITS
Altitude: 0-900 m
Mean annual temperature: 20-30ºC
Mean annual rainfall: 2000-6000 mm
Soil type: H. alchorneoides occurs naturally on alluvial, clayey or acid soils but in plantations, it has successfully grown on older, more weathered ultisols.

DOCUMENTED SPECIES DISTRIBUTION

Native: Belize, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Peru, St Lucia, Surinam, Trinidad and Tobago, Venezuela

Exotic:

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.

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PRODUCTS
Timber: H. alchorneoides has a reddish-brown heartwood, and sapwood with a lighter colour and pinkish hue. The wood specific gravity ranges from 0.59-0.86. It is suitable for heavy construction, including railway sleepers, bridges, columns and beams, fence posts, stakes, piles and in marine construction. In addition, it is used for furniture, cabinetwork, flooring, decorative veneers, turnery and joinery. It is durable and fairly resistant to termites but difficult to impregnate and prone to decomposition, especially below ground

Medicine: The seeds of H. alchorneoides contain oil that is effective against intestinal parasites (anti-helminthic). In Guyana, a decoction of the bark is used for its anti-tussive properties.

SERVICES
Reclamation: H. alchorneoides is among several species that have shown potential for growth on a variety of soils, indicating its suitability for use in re-vegetation of degraded lands. This species has a relatively high allocation to fine roots, making it less likely to experience nutrient limitation under low-fertility conditions. In addition to its tolerance to infertile soils, it grows on acid soils and has a high tolerance for exchangeable aluminium.

Soil improver: H. alchorneoides has a role in soil amelioration that may lead to an increase in soil organic carbon from to its large litter production

TREE MANAGEMENT
Site preparation prior to stand establishment usually involves site clearing. Potted seedlings transplanted with their nursery substrate and fertilizer applied to the bottom of the planting hole perform better. In Costa Rica, a spacing of 3 x 3 m is used to establish a plantation but 2 x 2 m can also be used. Fertilizer application and weeding in the first 12 months after planting out from the nursery have significant positive effects. First pruning is recommended at 9-12 months while thinning after 3-4 years. Thinned stumps are known to re-sprout, but the resulting root systems tend to be weak.

Trees show good growth and form, and have ability to self-prune. A high shade tolerance by lower leaves make the species compatible for planting in mixed species plantations, where H. alchorneoides forms the lower stratum in a stratified canopy. In monocultures, H. alchorneoides achieves 90% interception of incoming solar radiation at 2 years of age suppressing understorey regeneration.

GERMPLASM MANAGEMENT
It is best to collect the fruits from the tree by cutting down branches. The fruits are small and therefore it is useful to put tarpaulins on the ground under the tree. The fruits are collected when they have changed from green to red, indicating maturity. Once mature, the fruits start to fall and often there are only 3-4 days to carry out the collection

The fruits can be de-pulped although this is not done in many places. The seed storage behaviour is intermediate. The seeds are tolerant to desiccation and low temperatures, and should be stored at low moisture content in airtight bags in a cold. There are about 26000 seeds/kg.

PESTS AND DISEASES
The majority of the pests identified for H. alchorneoides are defoliating insects. These include Atta cephalotes, Eacles imperialis, Exophthalmus, Hylesia alinda, Megalopyge albicollis, Oiketicus abotti, Phobetron hipparchia, Rothschildia lebeau, Spodoptera spp., Taeniopoda and Trigona spp.

In addition to defoliators, H. alchorneoides is very susceptible to damping off due to fungal attack (Phytophthora spp., Fusarium spp.) at the seedling stage under very humid nursery conditions.

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SUGGESTED CITATION

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