

LOCAL NAMES

Spanish (mesquite,huizache,espino negro,espino jote,espino blanco)

BOTANIC DESCRIPTION

Acacia pennatula is a thorny legume to 12 m, rarely exceeding 8-10 m in height. Bole straight rarely more than 25 cm in diameter. Twigs armed with pairs of short stout stipular spines, 1-1.5 cm long.

Leaves bipinnate with numerous minute leaflets, 1-3 mm long.

Flowers yellow globose heads on yellow velvety peduncles, fragrant.

Pods variable in length from 4.8-12.8 cm; oblong or linear in shape containing, 8-seeded, pod weight unrelated to variation in pod shape.

The species belongs to a complex of closely related species that include *A. cochliacantha* and *A. macrantha*. Two subspecies *pennatula* and *parvicephala* are recognized based on pubescence and inflorescence traits. The native name 'huizache' is derived from the Nahuatl word for 'thorn' or 'spine' *huitztl*, and *ixachi*, meaning thorns in great amount. The generic name 'acacia' comes from the Greek word 'akis', meaning point or barb.

BIOLOGY

Trees flower between February and March, pods develop on the trees within 1-2 months. Unripe pods stay on the tree for 9-10 months, gradually turning dark brown in March-April and subsequently falling to the ground. Hybridization occurs between *A. pennatula* and *A. macrantha* in areas of sympatry.

ECOLOGY

A. pennatula is sparsely distributed in dry habitats, often occurring in association with pine and oak and is a characteristic element in very extensive areas of dry subtropical matorral vegetation and in dry thorn scrub forest. Its frost resisting attribute accounts for its successes in subtropical trials at Himachal Pradesh, India. The species is regarded as a highly invasive 'weedy' species threatening pasturelands.

BIOPHYSICAL LIMITS

Altitude: 0-2000 m, Mean annual rainfall: 500-1800 mm, Mean annual temperature: 19-28 deg.C

Soil type: Normally found growing on Regosols(shallow poorly developed soils), andosols(well developed acid soils derived from volcanic material) and acrisols(well developed acid soils with a low base saturation and rich in organic matter), best results are observed in the latter.

DOCUMENTED SPECIES DISTRIBUTION

Native: Colombia, El Salvador, Mexico, Venezuela

Exotic: India



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: There are few reports on regular human consumption of flour made from the pods or seeds of this plant.

Fodder: Produces indehiscent seed pods commonly eaten by livestock. The pods have high protein (15%) and fiber content and are low in tannins. These attributes make them appropriate as fodder for fattening either as principal or as supplemental feed. In many areas ranchers simply release the livestock into the pastures (huizachales) during the season of ripe pod production.

Fuel: Commonly used as a source of fuel and charcoal.

Timber: *A. pennatula* is a source of building materials, particularly fence posts however these have to be replaced every 3-5 years.

Tannin or dyestuff: Tannin can be extracted from the bark.

Medicine: The bark is used as a remedy for indigestion.

SERVICES

Erosion control: Its spreading root system is valuable in erosion control.

Shade or shelter: Grown along with coffee in plantations. Large trees provide shade to animals.

Reclamation: *A. pennatula* is a hardy, frost resistant species with potential use in dry habitats.

Nitrogen fixing: Fixes nitrogen.

Soil improver: Improves physical properties of the soil.

Boundary or barrier or support: Commonly used as fence posts.

TREE MANAGEMENT

Coppices well and this makes it suitable for management of woodlots.

GERMPLASM MANAGEMENT

There are between 15 000-18 000 seeds/kg. The hardness of the small round seed allows it to be stored for long periods with little viability loss, provided it is kept dry and cool. The hardness of the seed makes manual scarification by nicking as a seed pretreatment difficult.

PESTS AND DISEASES

Bruchid beetles and fungi attack the seeds.

FURTHER READING

Purata SE et al. 1999. Economic potential of the Huizache, *Acacia pennatula* (Mimosoideae) in Central Vera Cruz, Mexico. *Economic Botany*. 53(1): 15-29.

Stewart JL. et al. 1992. Wood Biomass estimation of Central American dry zone species. Oxford Forestry Institute, University of Oxford.

SUGGESTED CITATION

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