Schinus molle

L.

Anacardiaceae

LOCAL NAMES
Amharic (qundo berbere); Arabic (felfel-kazib,filfilrafie); English (pepper tree,California pepper tree,Chilean pepper tree,mastic tree,molle,pepper berry tree,weeping pepper,Peruvian mastic,pink pepper,Peruvian pepper tree); French (faux Poivrier du Perou,poivre rosé); German (Brasilianischer pfeffer,rosé-pfeffer,rosa pfeffer,Peruanischer pfeffer); Italian (Albero del pepe,Pepe del Peru,Schino); Spanish (pirul,pimienta,arveira); Swahili (mpilipili); Swedish (rosépeppar); Tigrigna (berebere-tselim,berbere-tselim)

Habit at Kula, Maui, Hawaii (Foest and Kim Starr)

BOTANIC DESCRIPTION
Schinus molle is an evergreen tree with weeping foliage, 3-15 m in height; trunk short; crown with equal spread; bark dark brown, deeply fissured, flaking; very sticky latex forms if the bark is damaged.

Leaves imparipinnate, with a winged rachis and 20-40 leaflets; leaflets linear-lanceolate, margins entire or dentate, 2-5 cm x 4-8 mm.

Flowers in hanging panicles can grow to 30 cm long; petals about 2 mm long; drooping clusters of tiny, pale yellow flowers develop into bunches of pink berries; the more female flowers a tree has the more berries will develop; some trees have mostly male flowers and have almost no ‘peppers’.

Fruits are small, round berries that develop from green to red then black.

The similarity of this species to the mastic tree (Pistacia lentiscus) is revealed in the origin of its generic name, from the Greek name for the mastic tree, ‘shinos’. The specific name ‘molle’ is the name by which the tree is known in western South America and is derived from ‘mulli’, the old Peruvian name. The common name ‘pepper-tree’ is due to the fact that the fruits contain seeds with a sharp taste, used for flavouring as a pepper substitute.

BIOLOGY
Flowering and seeding occur throughout the year. After pollination, the small flowers hanging in clusters develop into round berries.

ECOLOGY
S. molle tolerates high temperatures and once established is extremely drought resistant; resistant to frost and temperatures as low as -10 deg. C. It is shallow rooted and can be brittle; therefore, it is likely to be blown over or have its branches broken off in strong wind. A fire-retardant plant species.

BIOPHYSICAL LIMITS
Altitude: 0-2 400(3 900) m, Mean annual temperature: 15-20 deg C., Mean annual rainfall: 300-600 mm

Soil type: Prefers sandy well-drained soils. Tolerant of most soils including both dry sands and black cotton. Also tolerates alkalinity and salinity.

DOCUMENTED SPECIES DISTRIBUTION

Native: Argentina, Bolivia, Peru

Exotic: Australia, Brazil, Dominican Republic, Eritrea, Ethiopia, Greece, Haiti, India, Kenya, Mexico, Paraguay, South Africa, Spain, Sudan, Tanzania, Turkey, Uganda, United States of America

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: While not considered poisonous, the berries are not normally eaten. In Mexico, the fruit is ground and mixed with other substances to form beverages. The seeds are sometimes used to adulterate pepper.

Apiculture: S. molle is suitable for bee forage.

Fuel: The wood of S. molle can be burned as both firewood and charcoal.

Timber: Heartwood is a dull, light red, deepening upon exposure and becoming more or less purplish and rather oily looking; distinct but not sharply demarcated from the brownish-grey sapwood; moderately hard and heavy, specific gravity (air-dry) 0.54-0.68; texture medium to fine, uniform; grain variable, often irregular; very easy to work; durability high; wood is termite resistant and therefore suitable for posts.

Gum or resin: The tree produces an aromatic resin used as a mastic.

Latex or rubber: Latex is produced from many parts of the tree.

Tannin or dyestuff: Bark is used for tanning skins.

Essential oil: The fruit contains a volatile oil and has a flavour resembling that of a mixture of fennel and pepper. The oil of S. molle exhibits significant activity against several bacterial species, such as Alcaligenes faecalis, Klebsiella pneumoniae and Pseudomonas aeruginosa. The oil also shows the maximum toxic activity against fungus during the screening of some essential oils against some common storage and animal pathogenic fungi.

Alcohol: An intoxicating liquor known as ‘copalocle’ or ‘copalote’ is obtained by fermenting the fruit with pulque for 1-2 days.

Poison: The hanging strings of little pink berries of this attractive ornamental tree are reputed to be moderately poisonous, particularly the seed. Leaves are an insect repellant. The pollen, on contact or when inhaled, can cause dermatitis and asthmatic reactions. The tree also has antimicrobial, antifungal, piscicidal and viricidal properties.

Medicine: Leaf juice is used to treat ophthalmia and rheumatism; a bark extract infusion is used for diarrhoea, and resin of the bark is a dangerous purgative. Other known medicinal properties of the tree include using it as an astringent, a balsamic, diuretic, expectorant, masticatory, stomachic, tonic and vulnerary. The ailments it is known to treat include amenorrhoea, bronchitis, gingivitis, gonorrhoea, gout, tuberculosis, tumour, ulcer, urethritis, wart, wounds, and urogenital and venereal diseases.

SERVICES
Erosion control: The tree is planted for soil conservation.

Shade or shelter: The wide, multibranched crown provides good shade and acts as a suitable windbreak.

Ornamental: S. molle is commonly planted as an ornamental; it offers lacy, delicate evergreen foliage, a sculptural, twisted branch structure and an attractive textured bark. Ripe berries are often cut and used fresh or dried in floral displays. The tree has been grown as an indoor bonsai.

Boundary or barrier or support: It is sometimes planted as a live fence.

TREE MANAGEMENT
Reaches maturity in less than 20 years. Has a low-branching habit, and pruning of lower branches is recommended when the tree is young if clearance beneath is desired and to reduce the chances of the tree being blown over. Coppicing, pollarding and lopping also are viable methods of managing the tree. Planting the trees away from buildings will avoid possible damage from the fall of heavy branches as trees age.

GERMPLASM MANAGEMENT
Orthodox storage behaviour; viability can be maintained for several years in hermetic storage at 10 deg. C with 9-12% mc. There are 31 000-44 000 seeds/kg.

PESTS AND DISEASES
Susceptible to scale and psyllid damage; it harbours black scale, which is a serious pest of the Citrus species; in soggy situations it can be prone to root rot.

FURTHER READNG

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SUGGESTED CITATION

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