



SEED LEAFLET

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Schinus molle L.

Taxonomy and nomenclature

Family: Anacardiaceae

Synonyms: *Guatteria grandiflora* Donn. Sm., *Schinus angustifolius* Sessé & Moc., *S. areira* L., *S. bituminosus* L., *S. huigan* Molina, *S. molle* var. *areira* (L.) DC, *S. molle* var. *argentifolius* Marchand, *S. molle* var. *huigan* (Molina) Marchand, *S. occidentalis* Sessé & Moc.

Vernacular/common names: arbol del Perú, arveira, molle, pimienta, pirul, pirwi, tzactumi (Sp.); California pepper tree, Peruvian mastic, pink pepper (Eng.); poivre rosé (Fr.); Peruanischer (Brasilianischer) pfeffer, rosa pfeffer (Ger.); qundo berbere (Amharic); felfel-kazib (Arabic); mpilipili (Swahili); berebere-tselim (Tigrigna).

Distribution and habitat

The area of natural distribution is the Andes region, mainly Peru. It is found at altitudes up to 3900 masl, in areas with 300-700 mm rain/year. It tolerates high temperatures and once established it is extremely drought resistant; it is resistant to frost but not for long periods.

A fast growing pioneer species that is typically found in disturbed areas with secondary growth, roadsides and on agricultural lands. It grows well on stony sites and slopes. Prefers sandy, well-drained soils but is tolerant to most soil types and also to salinity and alkalinity.

Introduced to Central and North America, Europe and Africa and in some places it has become naturalised.

Uses

All parts of the tree have a high content of essential oil. It has a long history of medicinal uses throughout South and Central America and even today herbalists use it, especially for viral and bacterial infections.

The wood is used for firewood and charcoal; it is moderately hard and heavy with a density (air-dry) of 0.54-0.68 g/cm³, easy to work, durable and termite resistant and therefore suitable for posts.

The resin is used as a mastic, latex is produced from many parts of the tree, juice is produced from the fruits and the seeds are used as a substitute for pepper. It is planted for soil conservation, soil improvement, windbreaks, shade and as an ornamental.

Although the tree is evergreen and keeps about 75% of its foliage around the year, the fallen leaves, branches and fruits contribute significantly to soil

fertility. The ability to grow on stony sites and steep slopes makes it suitable for erosion control.

Botanical description

Evergreen tree with weeping foliage, 6-8 m tall, on good sites up to 15 m; trunk short with dark brown, deeply fissured and flaking bark, exuding a sticky latex when damaged.

Leaves compound, 15-30 cm long, with 15-41 leaflets; leaflets yellowish-green, 2-5 cm long, lanceolate with entire or serrate margins. The leaves have a peppery smell when crushed.

Flowers unisexual, small and pale yellow, in 10-15 cm long panicles. Female and male flowers normally on different trees.



Tree with mature fruits. Cochabamba, Bolivia. Photo: Dorthe Jøker, DFSC.

Fruit and seed description

Fruit: small, round drupes, 5-9 mm in diameter, bright red when mature, later turning black. The pulp is thin and leathery; it has a sweet taste and contains aromatic oils. There are one or two seeds per fruit.

Seed: 2-4 mm in diameter, round, brown-black, furrowed when dry. There are 30,000-40,000 seeds per kg.

Flowering and fruiting habit

Within the area of natural distribution flowering occurs in September to December and fruits are ripe in December-January. In East Africa fruits are collected in March.

All fruits do not mature at the same time and within a cluster the fruits will often be at different stages of maturity.

Harvest

The seeds are mature when the fruits have turned red. The fruits are collected directly from the tree.

Processing and handling

After collection the fruits are dried in the sun. If there are very different stages of maturity, it may be necessary to after-ripen the green, unripe fruits.

When the fruits are dry, they are pounded using a pestle and mortar and then winnowed to separate the seeds from the fruit pulp.

Storage and viability

The seed is orthodox and will retain viability for 2-4 years if dried to a moisture content of 7-10% and stored in airtight containers at 10°C, or better 0-4°C.

Dormancy and pretreatment

The oil in the pericarp may inhibit germination and it is important to wash the seeds thoroughly in running water for 24 hours before sowing. This will also prevent the seed from attracting ants in the seedbed and from fungal infections.

Sowing and germination

The seeds are sown in seedbeds or directly in containers with two seeds per container. It is recommended to use a light and permeable substrate, maybe because inhibitors need to be washed out before the seeds can germinate.

Germination starts after about two weeks and is normally terminated after four weeks. Germination is reported to be 60-80% but in some places, especially where the species is grown outside the area of natural distribution, low germination in the nursery is a problem. Under normal circumstances 1 kg of pure seed will yield 17,000 seedlings. When the seedlings are 30-35 cm tall, they are ready for planting in the field.

Vegetative propagation by cuttings is also possible. The trees are easily established and are fast growing. After one year the trees will normally have attained a height of 3 m and they reach maturity in less than 20 years.

It has a low-branching habit and pruning of lower branches is recommended when the tree is young. Coppicing, pollarding and looping are also viable methods of management.

Selected readings

Beentje, H.J. 1994. *Kenya trees, shrubs and lianas*. National Museum of Kenya.

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Mbuya, L.P., H.P. Msanga, C.K. Ruffo, A. Birnie and B. Tengnäs. 1994. *Useful Trees and Shrubs for Tanzania*. RSCU, SIDA.



Dry seed and panicle with mature fruits. Photo: Dorthe Jøker, DFSC.

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