

Malpighia glabra

L.

Malpighiaceae

LOCAL NAMES

English (West Indian cherry); French (cerise-antillaise); Thai (choeri); Vietnamese (so'ri)

BOTANIC DESCRIPTION

Malpighia glabra is a shrub or small evergreen tree, 2-3(-6) m tall, with spreading, more or less drooping branches on a short trunk.

Leaves opposite, ovate to elliptic-lanceolate, 2-8 cm x 1-4 cm, entire or undulating, dark green and glossy above, petiole short.

Inflorescences sessile or short-peduncled axillary cymes with 3-5 flowers; flowers bisexual, 1-2 cm in diameter, pinkish to reddish; calyx with 6-10 large sessile glands; petals 5, fringed, slender-clawed; stamens 10, filaments united below.

Fruit a bright-red, juicy drupe, depressed-ovoid, 1-3 cm in diameter and weighing 3-5 g, usually in pairs or threes, obscurely 3-lobed; skin thin, flesh soft, orange, acid to subacid.

Seeds 3, triangular, ridged.

In Florida, 'Florida Sweet' is a high-yielding cultivar.

A distinction is sometimes made in nomenclature between wild and cultivated (improved) plants, the latter being called *M. puniceifolia* L. It is now, however, generally accepted that both taxa belong to *M. glabra*. *M. coccigera* L. and *M. urens* L. are incidentally cultivated in South-East Asia for the same purposes as *M. glabra*.

BIOLOGY

In Puerto Rico flowering appeared to be independent of the daylength and several cropping periods are possible per year, especially with alternating dry and rainy periods. The flowers are pollinated by insects; honey bees substantially improve fruit set. Self- and cross-incompatibility have been reported. Fruits ripen completely 3-4 weeks after flowering. In Puerto Rico the large-fruited (up to 20 g/fruit) selection B-15 is most important.



Fruits and foliage (USDA GRIN)

ECOLOGY

Acerola can be grown almost anywhere in the tropics and warm subtropics. Young plants are killed by frost, but mature trees survive brief exposure to -2 deg. C. The plants tolerate long periods of drought and do not stand waterlogging.

BIOPHYSICAL LIMITS

Soil types: The soil should preferably be rich, deep and well drained, with a pH above 5.5. On calcareous soils the plants require additional micronutrients, on acid soils addition of lime is required.

DOCUMENTED SPECIES DISTRIBUTION

Native: Puerto Rico, United States of America

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.

PRODUCTS

Food: The sour fruits are eaten fresh, but more often preserved with sugar, e.g. in the form of jam. The edible pulp represents about half of the fruit weight and contains per 100 g: water 82-91 g, protein 0.7-1.8 g, fat 0.1-0.2 g, carbohydrates 7-14 g, fibre 0.6-1.2 g, ash 0.8 g. The energy value is 247 kJ per 100 g. The fruit -particularly when immature- is one of the richest sources of vitamin C, containing up to 4.7 g per 100 g edible portion. Juice is used commercially to enrich other fruit juices low in vitamin C. Canned juice and frozen fruit are exported to the United States, where they are used to enrich fruit preserves and are marketed as baby foods.

Timber: The wood, which is hard and heavy, can be used for small utensils.

Tannin or dyestuff: The bark has been used for tannin.

Medicine: The fruits are considered beneficial against liver problems, diarrhoea, dysentery, coughs and colds.

SERVICES

Ornamental: The plants have ornamental value.

Boundary or barrier or support: The plants are suitable for hedges.

Other services: The plants are very suitable for backyards and places where children play (to eat the fruits and to climb the trees).

TREE MANAGEMENT

The recommended spacing is 3-4 m on the square, or in double rows, e.g. (4 + 2) m x 3 m. NPK fertilization twice a year and application of organic material are recommended for Puerto Rico. Bearing will be enhanced if mature plants are judiciously pruned after the main crop, followed by a top dressing. Trees start to produce well 3-4 years after planting and continue for 15 years. Individual trees may produce 15-30 kg of fruits per year, whereas yields per hectare per year may vary considerably: (10-)15-25(-65) t.

GERMPLASM MANAGEMENT**PESTS AND DISEASES**

Diseases: Acerola is very susceptible to the root-knot nematode *Meloidogyne incognita* var. *acrita*. It can be controlled by soil fumigation, mulching and regular irrigation.

FURTHER READNG

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SUGGESTED CITATION

Orwa C, A Mutua, Kindt R, Jamnadass R, S Anthony. 2009 *Agroforestry Database: a tree reference and selection guide* version 4.0 (<http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp>)