

Naranjilla

Scientific Name: *Solanum quitoense*

Habitat: native to Peru, Ecuador and southern Columbia

Hardiness Zones:

Height: 3.5-8 feet (1-2.5 m)

Pests or Diseases: Aphids, leaf miners, slugs, rootknot nematodes

Hazards: People with very sensitive skin may find the hairs on the fruits irritating and should protect the hands when rubbing off the fuzz.

Varieties:

The botanical variety *septentrionale* already referred to is found in Valle, Cundinamarca, Magdalena, Santanderes and Tolima, in central and northern Colombia, and also in Ecuador and Venezuela. It is said to differ from the typical form, var. *quitoense*, of Ecuador, Peru and southern Colombia, only in having spines on the stem, branches, petioles, and principal veins of the leaves.

There is a sweet, but not very juicy strain around the Andean town of Baza, about 50 miles (80 km) east of Quito, Ecuador.

A wild, spiny form in Costa Rica, called *berenjena de olor* ("fragrant eggplant"), has woodier stem and branches and unusually large fruits to 2 1/2 in (6.25 cm) in diameter.

The fruit of seedling plants shows much variation. However, there seems to be little or no effort to select and name superior cultivars.

Description:

"The golden fruit of the Andes," Naranjilla plants are herbaceous perennial shrubs with a spreading habit that are commonly found throughout Central and South America. They are a medium to fast grower. Wild growing Naranjilla plants are spiny, while cultivated varieties are spineless and both types having thick stems which become woody as the plant matures. The foliage of the Naranjilla consist of 2-foot long, heart-shaped leaves that are soft and woolly; when young, and have red veins. There may be few or many spines on petioles, midrib and lateral veins, above and below, or the leaves may be completely spineless. The leaves are coated with brilliant purple hairs. Pink buds open into white flowers which are followed by golf-ball size seed pods with a fuzzy coating. Fragrant flower clusters are borne with five white upper

petals morphing into purple haired beneath. The resulting fruit is covered with brown hairs that are easily rubbed off to reveal the bright orange exterior when the fruit is ripe. Inside the Naranjilla fruit, the green to yellow juicy sections are separated by membranous walls. The fruit tastes like a delicious combination of pineapple and lemon and is peppered with edible seeds 3 mm in diameter.

Cultivation:

Naranjilla needs a moderate amount of maintenance, so some level of previous experience comes in handy when growing this plant. Ensure that you are aware of the soil, sun, ph and water requirements for this plant and keep an eye out for pests.

Although it is a subtropical species, the Naranjilla cannot tolerate temperatures over 85 F. (29 C.) and flourishes in climates with temps between 62-66 F. (17-19 C.) and high humidity. Intolerant of full sun exposure, Naranjilla growing conditions should additionally be in semi-shade and it will thrive in higher altitudes of up to 6,000 feet above sea level with well distributed precipitation. For these reasons, Naranjilla plants are often grown in northern conservatories as specimen plants but do not bear fruit in these temperate latitudes.

The plant does best in a rich, organic soil; also grows well on poor, stony ground, and on scarified limestone. It must have good drainage. In Latin America, naranjillas are planted on virgin soil in tracts where the large trees have been felled and the undergrowth burned off. The remaining trees provide semi-shade and wind protection. The Naranjilla requires an average to a large amount of water.

Along with its temperature and water requirements, Naranjilla care cautions against planting in areas of strong winds. Naranjilla plants like partial shade, in rich organic soils with good drainage, although Naranjilla will also grow in less nutrient rich stony soils and even on limestone.

Culture:

Naranjilla plants should be set 6 to 8 ft (1.8-2.4 m) apart each way, which provides 1,250 plants per acre (3,000/ha). Colombians transplant young seedlings from the nursery bed into polyethylene bags containing 5 1/2 lbs. (2.5 kg) of soil, keep them in semi-shade, give them ;4 oz (14 g) of super-phosphate and frequent irrigation. When 14 in (35 cm) high, they are set out in holes enriched with 8.8 lbs (4 kg) of organic compost, breaking the plastic bag as they place the plant in the hole. In Latin America, generally, the Naranjilla is planted out in the afternoon of a cloudy day at the beginning of the rainy season. The planting hole is 12 x 12 x 12 in (30 x 30 x 30 cm) and a circle at least 3 ft (1 m) in diameter is kept free of weeds. The plant is a heavy feeder and growth is rapid if fertilizer is given once a month, though most plantations are given no such nutritional care. A 12-12-20 mixture of NPK at the rate of 3 oz (85 g) per plant every 2

months has been recommended. In the coffee zone of Caldas, Colombia, where the soil is organically rich but low in phosphorus, the addition of urea, superphosphate and potassium sulphate, has been found to double productivity.

Seedlings flower 4 to 5 months after transplanting. Fruiting begins 10 to 12 months from seed and is continuous for 3 years in Panama. When the plants reach 4 years of age, productivity declines and they begin to die. In Costa Rica, they are said to bear until 4 to 7 years old. Grafted plants begin to bear about 1 year from planting in the field. In Florida, they continue fruiting for 2 years, then they die back and are replaced by young ones. Watering is essential in dry periods.

Harvesting and Yield

Though everbearing in its natural habitat, the Naranjilla fruits mainly in the winter in Florida; rarely, or very lightly, in the summer. For eating out-of-hand, the fruits are picked fully ripe, at which stage the calyx naturally separates from the fruit, leaving a circular depression. In the field, workers remove the hairs by stooping down and rubbing the fruit in dry grass. For marketing, the fruits must be picked when half-colored to avoid falling and bruising and to assure they are firm enough to withstand handling and packing. They are individually cleaned with a dry cloth and then packed in wooden boxes holding 400 fruits—about 70 lbs (32 kg).

In large-scale processing operations, there are mechanized devices for inspection and grading of fruits, washing off the hairy coat, drying, and removing the peduncle and calyx. For under ripe fruits with firmly adhering hairs, the machine must be equipped with brushes. Because of the continuous bearing, fruits must be collected every 7 to 10 days. In Ecuador, long trains of mules and burros make weekly trips with sacks and boxes of Naranjillas down the trails to central market places.

A healthy plant bears 100 to 150 fruits a year. A good annual yield is 135 fruits—20 lbs (9 kg)—per plant. This results in 25,000 lbs (10,417 kg) per acre, 60,000 lbs (27,273 kg) per hectare.

Fully ripe Naranjillas soften and ferment very quickly. Fruit picked when half colored will remain in good condition at ordinary temperatures for 8 days. They can be stored for 1 or 2 months at 45°-50° F (7.22°-10° C) and relative humidity of 70 to 80%.

Propagation:

In areas of Latin America, propagation of Naranjilla is usually from seed, which is first spread out in a shaded area to ferment slightly to reduce mucilage, then washed, air dried and dusted with a fungicide. Naranjilla can also be propagated by air layering or from cuttings of mature plants. Seedlings bloom four to five months after transplantation and fruit appears 10-12 months after seeding and continues for three years. Thereafter, the fruit production of the Naranjilla declines and the plant dies back. Healthy plants bear 100-150 fruit in their first year.

In Florida, the Naranjilla is easily cleft-grafted onto *S. macranthum* seedlings that have grown 2 ft (60 cm) tall and have been cut back to 1 ft (30 cm) from the ground, then split down the center for a distance of 1 to 2 in (2.5-5 cm). Selected scions 2 to 3 in (5-7.5 cm) long are inserted in the slit and tightly bound in place. It takes 2 to 3 weeks for the scion to fully unite with the stock. The plants are not set out until the scion has grown about 2 ft (30 cm). Other grafting methods—saddle, side, and whip—have also been successful.

The planting season is in the spring or in the autumn in the desert.

Growth is possible in a planter, flowerpot, or container, but is not conducive to be grown as a houseplant.

Uses:

Not only is naranjilla fruit juiced and drank as a beverage (lulo), but the fruit (including the seeds) is also used in various sherbets, ice creams, native specialties and may even be made into wine. The fruit may be eaten raw by rubbing off the hairs and then halving and squeezing the juicy flesh into ones mouth, discarding the shell. That said, edible fruit should be completely ripe or else it may be quite sour. Commercially, the juice is extracted mechanically from the cleaned and chopped fruits, strained, concentrated and canned or put into plastic bags and frozen.

Nutritional Value:

*According to analyses of fresh fruits in Colombia and Ecuador.

Food Value Per 100 g of Edible Portion*	
Calories	23
Moisture	85.8-92.5 g
Protein	0.107-0.6 g
Carbohydrates	5.7 g
Fat	0.1-0.24g
Fiber	0.3-4.6 g
Ash	0.61-0.8g
Calcium	5.9-12.4 mg
Phosphorus	12.0-43.7 mg
Iron	0.34-0.64 mg
Carotene	0.071-0.232 mg (600 I.U.)
Thiamine	0.04-0.094 mg
Riboflavin	0.03-0.047 mg
Niacin	1.19-1.76 mg
Ascorbic Acid	31.2-83.7 mg

<https://www.gardeningknowhow.com/edible/fruits/naranjillas/naranjilla-growing-information.htm>

<https://www.growplants.org/growing/naranjilla>

<https://myfolia.com/plants/834-naranjilla-solanum-quitoense>