



Grumichama

Scientific name: *Eugenia brasiliensis* Lam.

Synonyms: *Eugenia dombeyi* (Spreng.) Skeels, *Myrtus dombeyi* Spreng., *Stenocalyx brasiliensis* O. Berg

Family: Myrtaceae; Origin: Southeastern Brazil

Grumichama, also called Brazil cherry and Spanish cherry, is an attractive tree growing up to 45 feet tall with thick, waxy, oblong, deep green, 3–4-inch leaves. The tree can be pruned as a shrub and kept at 6-foot heights to facilitate harvesting. In Hawai‘i it produces fruit from 300 to 2000 feet elevation. Mature flowering trees are reminiscent of Japanese cherry trees, producing thousands of white four-petaled flowers, each with about 100 white stamens and yellow anthers. The long-stemmed fruit is ½–1 inch in diameter and turns from green to red to dark purple and black as it ripens. One variety produces a yellow fruit. The fruit’s thin, fragile skin holds juicy white to red pulp and one to three small gray seeds. The aromatic flavor is like a sweet, subacid cherry with a hint of jaboticaba.

A member of the Myrtaceae family, grumichama is related to guava, jaboticaba, mountain apple, and other members of the genus *Eugenia*, which includes more than 30 species with edible fruits. The tree was first reported in Hawai‘i in 1821 in Don Francisco de Paula Marin’s journal. Grumichama may have arrived here as early as 1791.

Cultivars

There are no cultivars reported, but a number of differences have been observed in seedling trees in Kona and Puerto Rico. Three types have been distinguished based on differences in the firmness of the pulp, the number of sepals, and the color of the fruit and pulp. There are no discernible differences in flavor.

Environment

Grumichama is a subtropical plant that grows best in partial shade but will produce fruit in full sun. Fruit pro-

duction is best when annual rainfall is above 70 inches; supplemental irrigation can be used where rainfall is lower. The tree prefers deep soils but will survive shallow sandy soils when given enough moisture. Fruit production generally begins in the fourth year from seedling trees that are about 4 feet tall. The trees will grow about 1 foot per year but can be kept pruned as a hedge and still produce abundant fruit. Given enough moisture, trees at elevations from 250 to 900 feet tend to produce more fruit than those at higher elevations, although leaf growth appears to be about the same. Other than that, seasonal changes and Hawai‘i’s microclimates have little effect on the tree as long as it has sufficient moisture. Numerous seedlings are often found under abandoned trees. The tree is well known for the speed at which the flowers develop into fruit. Depending on the elevation and rainfall, flowering occurs in May–July, with fruit being ready to harvest 3–4 weeks after flowering.

Horticulture

Although there is some commercial cultivation in Brazil, grumichama is still regarded more as a backyard tree when left to grow tall. Cultivated trees can be maintained at heights of 10 feet or less to facilitate harvesting. Trees can be planted at 15–20 foot spacing or grown at closer spacing in hedgerows, which although attractive tend to produce less fruit than trees spaced at 15 feet.

Apply ¼ pound of organic 6-6-6 fertilizer four times per year until the third year of growth, then switch to ¼ pound of 8-8-8 and increase the amount commensurate with growth. Fertilizer should be applied around the drip line. Twice-yearly applications of compost or mulch will help growth. Micronutrients should be applied as needed. Care should be taken not to over-fertilize, which sup-



Grumichama flowers



presses flowering. The tree is tolerant of a wide range of soils that are well drained. Sufficient water is essential, especially during flowering and fruit development. One-year-old trees in a dry location at 350 feet elevation, which received 10 minutes of daily irrigation with a ½-gallon/hour emitter, showed more growth than trees without irrigation. As with most *Eugenia* species, grumichama requires a little pruning for keeping the desired height or shaping and removing dead wood. Weed control is crucial during the first few years of growth. Mulching with organic materials or black polyethylene sheets reduces weed growth. Young, shallow-rooted trees require protection from strong winds.

Pests and diseases

There are no serious disease problems with grumichama when proper cultural practices are employed. It is considered a host for fruit flies. Following the guidelines established by the Hawai'i Area-Wide Fruit Fly Pest Management Program (HAW-FLYPM) greatly reduces the number of infestations. Birds remain the largest problem for growers of the fruit. Some Brazilian growers use netting to keep birds from the tree. Mylar tape, Christmas tinsel, and used CDs hung from the tree can help minimize bird damage. For many culinary applications where the fruit will be processed or cooked, it can be harvested when red, before birds are attracted to the sugars that develop in the dark purple, fully ripe fruit.

Propagation

Generally grown from seed, grumichama can be grafted or cloned by air-layer and cuttings. Seeds remain viable for up to 6 weeks.

Harvesting and yield

The harvest season is short, with fruits ripening over a 2-week period from May to July, depending on elevation. The thin-skinned grumichama fruit is delicate, and care needs to be taken when harvesting and packaging fresh fruits for commercial sales. Placing fruits in 1-pint containers in no more than a double layer prevents damage and maintains attractiveness. Keeping the stem on the fruit is difficult but helps to prevent desiccation. The fruit is marketable for 10–12 days after harvest. Mature, 10-foot-tall trees can yield more than 50 pounds of useable fruit. Mature trees kept pruned at 6 feet should yield about 30 pounds of fruit. Approximately 6 pounds of fruit can be processed into 8 cups of puree.

Postharvest quality

The fruits should be refrigerated as soon as possible after harvest. Samples harvested, packaged, and chilled within an hour maintain appearance and quality for 12 days. Samples left in open air for 5 hours before refrigeration (at 36°F) maintained quality for only 5 days. Fruits should be utilized as soon as possible after harvest. Processed puree can be frozen for future use, although some loss of flavor has been reported.

Packaging, pricing, and marketing

For grocery and restaurant distribution, plastic containers with single and double layers of fruit were tested with no discernable differences. Given the sensitivity of the fruit and skin, larger packages are not recommended, as the weight of multiple layers of fruit will damage the skin and cause indentations that make the fruit less desirable when used in displays. As many chefs and pro-

duce buyers in Hawai‘i are not familiar with grumichama, it is advisable to offer samples as well as information on the fruit. Fruit availability is generally for only 2 weeks of the year, and advance notice given to buyers will help in generating sales. Having a good working relationship with chefs and wholesale buyers will ensure that the fruit does not go to waste. Culled and excess fruits can be processed in a certified kitchen for future use. Many island chefs prefer to work with frozen puree.

Fresh fruit in plastic blister packs sold for \$7.00 per pound to hotel and restaurant chefs. Wholesale buyers and grocery store buyers paid \$4.50 to \$5.50 a pound. Processed puree in 8-cup packages sold for \$50.00. An 8-cup package can yield approximately 24 4-oz jars of jelly with a wholesale value of about \$100.00.

Food uses and nutrition

Grumichama is generally eaten fresh. Chefs have used it in buffet lines and as an edible decoration on plates. The taste has been described as a cross between black cherry and jaboticaba with a hint of Concord grape. Grumichama jelly and syrup can be found at some of Hawai‘i’s farmers’ markets. In the Caribbean, a reduction made from the juice of the fruit is used to accompany fish dishes. It can also be used as base for hot sauces.

Whole pitted fruits can be used in pies, cakes, and fruit salads. Processed puree is used in jam and jelly or in sauces. The pulp is juicy with a dry “grape like” skin.

Average degrees Brix

18 (10 samples from three trees at three elevations)

Fruit flavor (scale: 0 to 5)

Sweet to sour, 1.5

Bitterness, 0.5; with skin, 2

Astringency, 0.5; with skin, 2.25

Nutritional value per 100 g of edible portion*

Moisture	84 g
Protein	0.3 g
Fiber	0.6 g
Ash	0.43 g
Calcium	39.5 mg
Phosphorus	13.6 mg
Iron	0.45 mg
Carotene	0.039 mg
Thiamine	0.044 mg
Riboflavin	0.031 mg
Niacin	0.336 mg
Ascorbic acid	18.8 mg
Carbohydrate	13.4 g
Fat	0.3 g
Vitamin A	67 IU

*Values compiled from various sources



Grumichama “clam-shell” fruit pack for retail sale



Grumichama tart with lilikoi sauce