

## Feijoa sellowiana

feijoa

Berg

Myrtaceae

### LOCAL NAMES

English (guavasteen, New Zealand banana, horn of plenty, Brazilian guava, fig guava, pineapple guava); German (fejoa, ananasguave); Portuguese (feijoa, goiaba abacaxi, goiaba verde, goiaba serrana); Spanish (guayaba pina, guayabo chico, guayabo del pais, guayabo grande); Trade name (feijoa)

### BOTANIC DESCRIPTION

Feijoa sellowiana is a shrub or small tree, 3-6 m in height and very branchy. Trunk cylindrical, peeling off in small pieces. Bark pale grey; branches spreading, swollen at the nodes, white-hairy when young.

Leaves evergreen, thick, leathery, opposite, short petioled, bluntly elliptical; 2-6 cm long and 1-3 cm wide; smooth, glossy on upper surface and finely veined, silvery underneath.

Flowers conspicuous, 4 cm wide, bisexual, borne singly or in cluster, stamens long, erect purple or bright red, topped with large, round, yellow anthers; petals 4, oval, fleshy; white tinged with purple on the inside, 1-2 cm long; sepals 4, persistent.

Fruits 5-8 cm long, 3-7 cm in diameter; variable in shape from round to elongated pear shape, with the persistent calyx segments adhering to the apex. Skin waxy, dull blue-green to blue or greyish green, sometimes with a red or orange blush; texture varies from smooth to rough and pebbly. Flesh thick, white, granular, watery; central pulp translucent, enclosing the seeds; sweet or subacid, suggesting a combination of pineapple and guava or pineapple and strawberry flavor, often with overtones of winter green or spearmint. The fruit emits a strong long-lasting perfume, even before it is fully ripe.

There are usually 20-40, occasionally as many as 100, very small, oblong seeds hardly noticeable when the fruit is eaten.

It is the best known of the 3 species in the genus which the German botanist, Ernst Berger, named after Don da Silva Feijoa, a botanist of San Sebastian, Spain. The specific name honors F. Sellow, a German who collected specimens in the province of Rio Grande do Sul in southern Brazil.

### BIOLOGY

It is a cross-pollinated plant and self-sterility is frequent although there are self-fertile selections. Bees are the chief pollinators. Most flowers pollinated with compatible pollen show 60 to 90% fruit-set. Hand-pollination is nearly 100% effective. Feijoa flowers in spring and the fruit ripens in autumn from March to May in the Southern Hemisphere and from October to December in the Northern Hemisphere. The early varieties ripen in March, while the late varieties do so from April onwards in the Southern Hemisphere. The plant fruits in 3 to 5 years from seed.



Detail of leaves (Thumbnail Pictures)



Detail of leaves (Thumbnail Pictures)



Detail of fruit (unknown)

**ECOLOGY**

The feijoa needs a subtropical climate with low humidity. The plant thrives where the weather is cool part of the year and it can withstand temperatures as low as -11.11°C. It is drought-resistant but needs adequate water for fruit production. The feijoa can tolerate partial shade and slight exposure to salt spray.

The species is widely distributed in the southern part of South America, from lat. 26°S in southern Paraná in Brazil, to lat. 35°S in Uruguay, including northeastern Argentina and southern-central Paraguay. In Brazil there are still wild populations in forests (gallery) and deforested areas on sites at altitudes over 500 m. At these sites, the summer is hot and rainy and the winter reaches temperatures of 0 to 8°C, sometimes dropping to -4°C.

**BIOPHYSICAL LIMITS**

Altitude: up to 1 000 m

Mean annual temperature:

Mean annual rainfall: 700-1 000 mm

Soil type: Feijoas will grow in a wide variety of soils. The best harvests, however, come from plants growing in well-drained sandy loam soil with a pH between 5.5 and 7.0. They are fairly salt tolerant, but salinity slows growth and reduces yields.

**DOCUMENTED SPECIES DISTRIBUTION**

Native: Argentina, Brazil, Paraguay, Uruguay

Exotic: Australia, Bahamas, Chile, France, India, Israel, Italy, Jamaica, New Zealand, Portugal, Russian Federation, Spain, Switzerland, United Kingdom, US



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 fresh fruit is widely consumed because of its characteristic flavour and aroma, which are similar to pineapple. The fleshy petals of its beautiful flowers are also appreciated. In addition, there is a wide variety of industrialized products on the market in the form of paste, jam, crystallized fruits, preserves in syrup and liqueur. The flesh can be used in the soft drinks and ice-cream industries.

Timber: The wood is dense, hard and brittle.

**SERVICES**

Erosion control: The shallow root system holds soil and prevents erosion.

Shade or shelter: Feijoa is planted as a windbreak around wind-sensitive crops.

Ornamental: The foliage is attractive at all seasons and is planted as an ornamental. They also make an excellent foundation planting, either singly or as an informal hedge.

Boundary or barrier or support: When planted close together, the shrubs make a nice hedge, screen, or windbreak.

**TREE MANAGEMENT**

When 60 to 80 cm in height, they are transplanted at a distance of 6 x 3 m or 6 x 2 m, which will give 550 to 850 saplings per hectare. With an average production of 1000 fruits per adult tree and fruits weighing 30 to 60 g, these densities produce yields ranging from 16 to 50 tonnes per hectare. Feijoas respond well to pruning and can easily be shaped to any desired form. The shrubs may be set 1.5 m apart to form a barrier hedge; 1 m apart in a compact foundation planting.

The feijoa requires little care beyond good soil preparation before planting. Subsequent cultivation is inadvisable because of the plant's shallow, fibrous root system which should be left undisturbed. If planted for its fruit, fertilizer should be low in nitrogen to avoid excessive vegetative growth.

Thinning permits easier harvesting. When grown as a hedge, the feijoa responds well to heavy pruning or shearing, but this reduces flower and fruit production.

**GERMPLASM MANAGEMENT**

Seeds are recalcitrant. They are separated by squeezing the seedy pulp into a container, covering with water, and letting the liquid stand for 4 days to ferment. The seeds are then strained out and dried before sowing. The seeds will retain viability for a year or more if kept dry. Germination takes place in 3 weeks.

**PESTS AND DISEASES**

*F. sellowiana* is remarkably pest-resistant. Occasionally it may be attacked by hard wax scale (*Ceroplastes sinensis*) and associated sooty mold in New Zealand and Florida, also greedy scale in New Zealand, by black scale (*Saissetia oleae*) in California and southern Europe. In New Zealand, the larvae of a leaf-rolling caterpillar (*Tortrix* spp.) and of a bagworm moth may eat holes in the leaves but they are effectively controlled with suitable sprays. Fruit flies attack the ripe fruits. A leaf-spotting fungus (*Sphaceloma* sp.) occasionally requires control measures. In Florida, leaf spot is caused by the fungi *Cercospora* sp., *Cylindrocladium scoparium*, and *Phyllosticta* sp.; thread blight by *Corticium stevensii* Burt. and *Rhizoctonia ramicola*, and mushroom root rot (*Clytocybe tabescens*).

**FURTHER READING**

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Okuda T et al. 1982. Ellagitannins of the Casuarinaceae, Stachyuraceae and Myrtaceae. *Phytochemistry*. 21(12): 2871-2874.

**SUGGESTED CITATION**

Orwa C, Mutua A , Kindt R , Jamnadass R, Simons A. 2009. Agroforestry Database:a tree reference and selection guide version 4.0 (<http://www.worldagroforestry.org/af/treedb/>)