

## FEIJOA (*Acca sellowiana*)

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Feijoa (*Acca sellowiana* (Berg.) Burret., Myrtaceae family, synonym *Feijoa sellowiana* Berg., also known as “goiabeira-serrana” (in Brazil) and “guayabo” (in Uruguay), is native from the highlands of Southern Brazil and Northeastern region of Uruguay. In Southern Brazil, the specie is adapted to cold climate, with a common dispersion in areas with altitudes higher than 800 m.

The plant is an evergreen shrub or small tree (2 to 6 m high). The Feijoa fruit (in fact a pseudo-fruit of pome type) is oblong, with white flesh, smooth to irregular skin surface, medium size (diameter of 3-5cm, length of 4-10cm, and weight from 20-250g), and flesh representing 15-50% of fruit total weight. The fruit is closely related to guava (*Psidium guajava* L.), but the skin (non edible) is dark green, with flesh having a singular sweet/acid taste and a very aromatic flavor. The fruit can be consumed *in natura* or used to make “smoothies”, wine, yogurt, jam, “chutney”, ice-cream, and drinks. In the areas of natural occurrence of this specie in Brazil and Uruguay, fruits are consumed by local people from February until beginning of June. The flowers have a pleasant flavor and they can also be used for human consumption (to decorate dishes, salads and desserts). The plants can also be used as ornamental in residential and public parks/gardens due to their small size and the beauty of the flowers.

The Feijoa fruit shows anti-bacterial, antioxidant and anti-allergenic activities. The presence of flavonoids helps immunological activity, providing chronic responses in inflammatory processes. Pharmacological studies have shown that flavonoids in the fruit act selectively, leading to apoptosis in tumor myeloid cells, in cases of leukemia.

The fruit is climacteric, with high rates of respiration and ethylene production at postharvest. Therefore, fruit ripens very fast, requiring the adoption of strategies to preserve its quality. Fruits can be cold stored for about 20 days at 4°C, followed by two days of shelf life at 20°C. Cold storage for much longer period affects fruit quality, as a result of poor taste (caused by reduced acidity and soluble solids content), reduced vitamin C content and high incidence of flesh browning.

Feijoa is native in Southern Brazil, but the specie is cultivated commercially exclusively in other countries (mainly in New Zealand and Colombia), with cultivars originated from plants collected in Uruguay. Feijoa is almost unknown in the Brazilian fruit market. However, sensory tests performed in two commercial centers in the State of Santa Catarina (in Florianópolis and Blumenau) have shown that more than 90% of the consumers rated the fruit as having taste and flavor considered good or excellent. This shows the internal potential market for feijoa in Brazil that can be explored. However, this requires investment in marketing, since there are potential consumers in the main urban centers, but they do not know the fruit and how it can be consumed.

In Santa Catarina, feijoa has been studied since 1986 by Epagri (Empresa de Pesquisa Agropecuária e Extensão Rural de Santa Catarina S.A.), aiming the selection of superior genotypes and the development of profitable production systems. As a result of this research, in a program to select improved cultivars of feijoa, Epagri has patented in 2007 and 2008 four new Brazilian feijoa cultivars for commercial use: Alcântara, Helena, Mattos, and Nonante.

The fruit sensory quality explains the main interest of studies with feijoa. Also, the commercial production of feijoa will supply a new type of fruit with nutraceutical benefits to the consumers. This highlights the relevance of research to promote the commercial production of feijoa in the highlands of Southern Brazil. Therefore, researches of Epagri, UFSC (Universidade Federal de Santa Catarina) and UDESC (Universidade do Estado de Santa Catarina) have been involved with several research projects, in basic and applied areas, to surpass the “bottlenecks” that limit the cultivation of feijoa in Brazil. Among these goals, these Institutions have recently published a Technical Bulletin entitled “Orientações para o cultivo da goiabeira serrana (*Acca sellowiana*)” (Feijoa growing information) (Florianópolis: Epagri, 2010. 44p. Boletim Técnico 153)<sup>3</sup>. This publication provides technical information for feijoa

# REVISTA BRASILEIRA DE FRUTICULTURA

v. 33, n. 1 p.001-334

production (propagation, planting, nutrition, pruning, training, pest and disease control, pollination, harvest, postharvest and commercialization), representing an important contribution to encourage the commercial production of feijoa in Brazil.

The authors express gratitude to the Researchers Jean Pierre Henri Joseph Ducroquet, Joel Donazolo and Juan Manuel Otálora Villamil, who kindly sent the photos shown on the cover page of this issue.

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