CONVECTIVE DRYING OF FEIJOA FRUITS: PRETREATMENT METHODS AND TARGET

Gharib Kerim Hafizov[1*]

[*]Research Institute of Horticulture and Tea Industry of the Ministry of Agriculture, 4035 Zardabi village, Quba district, Azerbaijan Republic

[*]e-mail: hafizov-54@mail.ru

Abstract

Studies show that the fruits of the *Acca sellowiana* plant have antimicrobial, antitumor, anti-inflammatory, and antioxidant properties, which gives reason to consider them as particularly valuable biologically active product. Unfortunately, due to the tendency of feijoa fruits to quickly spoil, they are available fresh for only a couple of weeks, due to cold storage; it is possible to extend it to four weeks. This time is also too short for the organization of their drying, which, according to existing practice, includes only fruits that can be cut into hard slices of a certain shape. Taking this into account, the aim of this work was to develop technological solutions that would allow to include not only hard, but also overripe feijoa fruits in drying.

The basis of the applied techniques was invested in experiments with hard and softened fruits of feijoa cultivar "Iridanali" of Lenkaran district (Azerbaijan). They were dehydrated in a vertical drying cabinet until they reached 24 - 25% (when 100% dried feijoa was obtained) and a lower residual humidity (chips). Pre-processing included cutting the fruit, which was carried out manually (overripe fruits) or using a vegetable cutter (hard fruits). Products from cutting fruit in the form of "opened flower" (softened feijoa), crosswise or in slices with a thickness of 5 mm rounded shape, were placed in a single layer on grids with cells of 0.5 cm in size, then fed into a dryer, which was previously heated to 100 ^{0}C with the door closed. The dewatering process was carried out with the dryer door open so that it was possible to ensure a stable outflow of moist air and the same temperature of 70 - 72 ^{0}C for all the time of the process (3 -10 hours).

We can say that for two different states of feijoa fruits - hard and soft-determined we gained two different approaches to their drying, which were implemented in the developed technologies for obtaining a product whose organoleptic properties correspond to the characteristics of natural chips with sugar, 100% dried feijoa, and dried feijoa in white chocolate.

Calculations have shown that the proposed technologies are promising for commercialization and wide application.

Key words: *Feijoa in solid and softened states, Pretreatment methods, Drying, Target products, Prospects for commercialization.*