

PERSPECTIVE OF USING ZIZIPHUS JUJUBA MILL IN THE PRODUCTION OF MARMALADE-PASTILE PRODUCTS

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The technology for the production of marmalade and pastile occupies a fairly strong position in the jelly group of confectionery products. A promising solution to use as the main raw material can be the culture of jujube *Ziziphus jujuba* Mill., as a highly valuable raw material that has both nutritional and biological value equally, containing natural fruit sugars, protein, fat, ascorbic acid, vitamin PP, β -carotene, catechins, leucoanthocyanins, as well as a large amount of pectin.

The main physico-chemical parameters of fruits of jujube varieties Ta-Yang-Zao and Ya-Zao, selected in the course of research on an experimental plot of gardening in the Denchen district, the Republic of Moldova, were studied, and recipes were developed for obtaining marmelade-pastile products with a ratio of apple puree and jujube puree - 80:20, 50:50, 20:80, with the use of natural dye from the safflower petals. Safflower petals are a perspective source of yellow and red food dyes. It is also known that the yellow dye (YFDS), chalcones nature have high biological activity. Separation of yellow and red dyes from the petals of safflower was performed by extraction; after separated, the YFDS liquid concentrate was evaporated at dried under vacuum. The resulting samples of marmalade-pastile products containing YFDS were analyzed by the HPLC method, as a result, it was proved that the peaks of the three main chalcones from YFDS (HSYA, AHSYB, precartamin), had the same retention time and area of concentration as the YFDS samples. These data confirm, that YFDS has high thermal stability and allows you to save an attractive color of the obtained products. As the most important indicators of *Ziziphus jujuba* Mill. for the production of marmalade and pastille products, the content of sugars, which amounted to 20-25%/mass, of vitamin C, the content of which in jujube fruits exceeds that in apples by more than 4 times and amounted to 70 – 75 mg/100 g, pectin substances, the content of which was 0.40-0.50%/mass., as well as the degree of esterification of pectin, which was 40-46%, depending on the variety. The last two indicators are key, since the mechanism of gelling, and, consequently, the gelling ability, depends on them.

The resulting samples of marmalade-pastile products have high quality indicators, have a pleasant, bright appearance and color, ideal textural characteristics, and a balanced taste. During the study of the final product during its storage for 30 days at a temperature of $+2\pm 10^{\circ}\text{C}$, QMAFAnM did not exceed $3 \cdot 10^3$ CFU/g, which is a good indicator of safety. The highest complex quality indicators were noted for marmalade at a ratio of apple puree and marmalade puree 50:50. This type of product has a high biological value, low energy value due to the exclusion of the use of sugar in the



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recipe, a bright color that provides a natural dye obtained from safflower petals, which allows positioning this product as a dietary product and classifying as a group of bio-products.

Keywords: berry sauce, sea buckthorn, quality, safety, antioxidant, bioactive compounds, YFDS (yellow food dye from safflower)

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