

FUNCTIONAL PROPERTIES AND TECHNOLOGICAL APPLICABILITY OF ZIZIPHUS JUJUBA MILL FRUIT

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Introduction and Background

The study focused on the functional properties and technological applicability of Ziziphus jujuba Mill fruits, with an emphasis on exploiting their functional and technological potential. The native Ziziphus fruits were purchased from the commercial network, harvested in 2024, primarily processed, and frozen in the form of puree. Ziziphus jujuba Mill fruits have a high polyphenol content (up to 917.83 mg GAE/L), significant antioxidant activity (over 93%), and contribute to improving the nutritional value of processed products, while maintaining a high degree of sensory acceptability. In this context, there are real prospects for the industrial use of jujube in the development of functional products with added value.

Methodology

The research focuses on the formulation of a marshmallow-type product enriched with ziziphus jujube pulp in a proportion of 10% and 25% of the total mass. The total polyphenols content and antioxidant activity of the marshmallow-type product samples were determined by using Folin Ciocalteu and DPPH reagents.

Results

The results obtained confirm the significant contribution of Ziziphus jujuba Mill puree to improving the functional and sensory properties of the marshmallow-type product. The products developed are distinguished by a high polyphenol content: 154.66 mg GAE /L for samples with 10% Ziziphus jujuba Mill puree added and 271 mg GAE/g for samples with 25% puree, compared to 70.51 mg GAE /L for the control sample. The samples with 10% and 25% Ziziphus jujuba pulp added showed increased antioxidant activity values of 4.99% and 19.34%, respectively, compared to the control sample, which recorded only 0.3%.

Conclusions and Implications

The organoleptic evaluation of the samples shows that the inclusion of Ziziphus jujuba pulp significantly changes the sensory profile of the final product. The control sample is notable for its pleasant texture, but has a less harmonious taste balance, scoring an average of 4.86. In contrast, the variants fortified with 10% and 25% Ziziphus jujuba puree bring added functionality and sensory diversity, achieving average scores of 4.79 and 4.61, respectively.

Keywords: *antioxidant activity, functional dessert, marshmallow, polyphenol content*

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