IECBM 2022

Abstract

Use of Mango By-Products in the Development of Functional Confectionery †

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† Presented at the 2nd International Electronic Conference on Biomolecules: Biomacromolecules and the Modern World Challenges, 1–15 November 2022; Available online: https://iecbm2022.sciforum.net/.

Abstract: The mango (*Mangifera indica* L.) is one of the most cultivated fruits in the world, however, its processing generates high amounts of waste, called agro-industrial by-products, among which the stone or seed, peel and bagasse stand out. It has been reported that these by-products contain significant amounts of nutrients and phytochemicals, mainly fiber and phenolic compounds, which represent a potential added value for the food industry, which has increased the interest in their study and applications by various authors. One of these booming applications is functional confectionery, which represents a vehicle for taking advantage of the benefits of these by-products. Therefore, the present work seeks to develop and evaluate the effect of a functional confectionery product (gummy) enriched with different concentrations of bagasse and mango peel on the texture profile characteristics (TPA), essential for sensory evaluation, selecting the mixture with greater similarity to the commercial product for its subsequent proximal characterization. As a result, for mixture 2, which contains a high pectin and bagasse content, added to a low shell content, with respect to the other mixtures, it presents a TPA profile similar to the control commercial gummy. The proximal composition showed 41% carbohydrates, of which 59% belongs to total dietary fiber, divided into 26% soluble and 33% insoluble. When performing the Pearson correlation of mixtures vs. the texture profile, the hardness parameter is negatively correlated with the type of mixture, which in turn is related to both the gumminess and the chewiness of the product. These results suggest that it is possible to incorporate these agro-industrial by-products into food and that it is comparable with that already marketed. In addition, with its high percentage of fiber, it could be considered a potentially prebiotic food.

Keywords: mango bagasse-mango peel-functional candy-fiber

Citation: Lima, I.; Gaytán, M.; Ramírez, A.; Villamiel, M.; Campos, R.; Cuellar, L. Use of Mango By-Products in the Development of Functional Confectionery. *Biol. Life Sci. Forum* **2022**, *2*, x. https://doi.org/10.3390/xxxxx

Academic Editor(s):

Published: date

Author Contributions:

Funding:

Institutional Review Board Statement:

Informed Consent Statement:

Data Availability Statement:

Conflicts of Interest: