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APPLICATION OF AN ANTHOCYANIN-BASED COLORANT IN A PASTRY PRODUCT

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The fig (*Ficus carica* L.) peel is an agro-industrial by-product that is not applied in any field of industry. Due to its colour, it can be considered as an important source of anthocyanins that can be used in the preparation of food colorants [1]. In the present study, an anthocyanin-based food colorant was obtained from fig peel and was applied in a food product, a doughnut icing, in order to analyse the variations induced in its nutritional, chemical, and physical composition during storage (24 hours). The anthocyanin-rich extract was obtained by ultrasound assisted extraction, its composition was determined by HPLC-DAD-ESI/MS, and the cytotoxicity was tested against a primary culture of non-tumour porcine liver cells, PLP2. The nutritional properties of the prepared icing were evaluated following official food analysis methods [2] and free sugars and fatty acids profiles were obtained by HPLC-RI and GC-FID, respectively. The pH was measured with a pH-meter and the colour (L^* , a^* , and b^*) and texture (firmness, consistency, cohesiveness, and viscosity) parameters were measured using a colorimeter and a texture analyser.

The main colouring compound found in the fig peel extract was cyanidin-3-rutinoside and the extract did not reveal cytotoxic properties, being safe for food application. Comparing with a control formulation (**Figure 1**), the extract addition did not cause significant changes in the icing nutritional, free sugars, and fatty acids profiles. After storage, there was a slight decrease in the moisture content, probably due to absorption from the environment. For this reason, nutritional and chemical parameters tended to increase after 24 hours. The addition of the extract did not change the pH of the icing. However, significant differences were observed for all the texture parameters both between the control and the coloured icing and between both icings regarding the day of preparation and 24 hours after. Moreover, the differences after storage were much lower in the coloured icing, which is an additional advantage of its application.

The results obtained corroborate the possibility of recovering colouring molecules from agro-food industry residues to be used as food colorants.

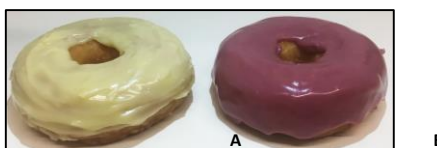


Figure 1: Control (A) and coloured (B) icing formulations.

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