

Exploring the use of turmeric extract as a natural colorant in orange

“Queijadas”

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Introduction

In the conventional bakery industry, artificial additives such as colors, flavors and preservatives are commonly used to improve product appearance, flavor, and shelf life. However, consumers are increasingly rejecting these additives in favor of healthier alternatives. This trend is driving the growing use of natural ingredients and “clean label” products in the bakery and pastry sector, which are notable for their absence of artificial additives [1]. Plant-based colorants obtained from leaves, stems, fruits, and flowers are emerging as promising alternatives due to their numerous health benefits and the growing global interest in these products [2].



Objectives

The study investigated the replacement of artificial coloring with turmeric extract (*Curcuma longa* L.) in orange “queijadas”, a typical Portuguese cake.

Methodology

Concentrations of 50 and 100 mg of turmeric extract per “queijada” were tested, resulting in four formulations: with artificial coloring, without coloring, with 50 mg of turmeric extract and with 100 mg of turmeric extract. Colour and texture analyzes were carried out to evaluate the different formulations.

Results

The colour results show that the “queijadas” enriched with curcuma extracts have similar L^* and b^* parameters to those with artificial color, except for the a^* parameter. Internally, the 50 mg curcuma-based “queijadas” are more similar to the control. Externally, the 50 mg curcuma-based “queijadas” are closer to the L^* parameter, while the 100 mg curcuma-based “queijadas” are closer to the b^* parameter. In terms of texture, the curcuma-based “queijadas” are softer and less sticky than those with artificial color and without color. The 100 mg curcuma-based “queijadas” are the least hard, while the 50 mg curcuma-based “queijadas” are the least sticky.



control with dye



control without dye



100 mg of turmeric extract



50 mg of turmeric extract

Conclusions

The results indicate that the turmeric extract improves the texture, making the product softer and less sticky. This encourages the replacement of artificial colors with natural alternatives without significantly impacting the sensory properties of the food.

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This work aims to explore natural matrices for safe incorporation into food, supporting food quality and safety, and developing high-quality products (Goals 3 and 12)

References

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