



PASTA FORTIFICATION WITH TOMATO PEEL BY-PRODUCT: IMPACT ON TECHNOLOGICAL AND ANTIOXIDANT PROPERTIES

Faouzia Kadri¹, Abdallah Bouasla^{2✉}, Maroua Amrani³, Ahlem Kamila Baibout³, Hind Benchettah², Alyssa Hidalgo⁴, Malika Barkat¹

¹ Laboratory of Biotechnology and Food Quality (BIOQUAL), Institute of Nutrition, Food and Agro-Food Technologies (INATAA), Brothers Mentouri Constantine 1 University, 7 km, 25000 Constantine, Algeria

² Laboratory of Agro-Food Engineering (GéniAAl), Institute of Nutrition, Food and Agro-Food Technologies (INATAA), Brothers Mentouri Constantine 1 University, 7 km, 25000 Constantine, Algeria

³ Institute of Nutrition, Food and Agro-Food Technologies (INATAA), Brothers Mentouri Constantine 1 University, 7 km, 25000 Constantine, Algeria

⁴ Department of Food, Environmental and Nutritional Sciences (DeFENS), University of Milan, Via Celoria 2, 20133 Milan, Italy

✉ abdallah.bouasla@umc.edu.dz

<https://doi.org/10.34302/crpjfst/2024.16.2.14>

Article history:

Received: December 24th, 2023

Accepted: May 24th, 2024

Keywords:

Enriched pasta;

Antioxidant capacity;

Total polyphenols;

Colour;

Cooking quality.

ABSTRACT

Tomato peel is a by-product rich in bioactive compounds and dietary fibers, which are deficient in wheat pasta. The objective of this study was to investigate the impact of the addition of various levels (0, 5, 7.5, 10, 12.5 and 15%) of an industrial tomato peel by-product on selected properties of enriched pasta. The addition of tomato peel by-product significantly increased lipid, ash, pigments, total polyphenols content, and antioxidant capacity (ABTS and FRAP). In contrast, the enriched pasta showed a significant decrease in optimal cooking time and swelling index; the increase in cooking loss did not exceed the acceptable limit (8%). The tomato by-products can be successfully valorized in pasta-making because a 15% addition enhances the nutritional value of the final product without affecting the technological quality.