

# International FoodTec Conference

Shaping the Future  
of Sustainable  
Food Ecosystems



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Interreg



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Net4food

RED DE INVESTIGACIÓN E INNOVACIÓN  
PARA EL SECTOR ALIMENTARIO

# BOOK OF ABSTRACTS

-  Challenges and Opportunities in the Food System of the Transborder Region
-  Innovation, Technology, and Food Security in a Changing Global Landscape
-  Nutrition and Consumer Trends: Enhancing the Value of Endogenous Resources
-  Quality, Food Safety, and Environmental Responsibility
-  Marketing, Digitalization, and the Future of the Food Sector
-  Strategic Developments in the Net4Food Project

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# TECHNICAL DATA

## Title

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## Authors

Lillian Barros (CIMO/IPB, Portugal)

Alexandre Gonçalves (MORE, Portugal)

Sara Vieira (CIMO/IPB, Portugal)

Tiago Reis (CIMO/IPB, Portugal)

Natacha Pinto (MORE, Portugal)

Bárbara Matias (MORE, Portugal)

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Instituto Politécnico de Bragança

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5300-253, Bragança, Portugal

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## P44 | VALORISATION OF MELON PEEL AND SEED FLOURS IN BAKERY PRODUCTS: A SUSTAINABLE APPROACH TO FOOD WASTE REDUCTION

Mafalda Alexandra Silva<sup>1,2</sup>, Helena Soares Costa<sup>1,2</sup>, M. Beatriz P. P. Oliveira<sup>2</sup>, Nelson Félix<sup>3</sup>, Tânia Gonçalves Albuquerque<sup>2,3\*</sup>

<sup>1</sup>Department of Food and Nutrition, National Institute of Health Dr. Ricardo Jorge, Av. Padre Cruz, 1649-016 Lisbon, Portugal; <sup>2</sup>REQUIMTE-LAQV/Faculty of Pharmacy from University of Porto, R. de Jorge de Viterbo Ferreira 228, 4050-313 Porto, Portugal; <sup>3</sup>Estoril Higher Institute for Tourism and Hotel, Av. Condes de Barcelona, n.º 808, 2769-510 Estoril, Portugal. \*[tania.albuquerque@eshte.pt](mailto:tania.albuquerque@eshte.pt)

Food waste is widely recognised as a major global problem with direct consequences for the economy, society and environment. The valorisation of fruit by-products offers a promising strategy to face the growing challenge of food waste, which can compromise the implementation of the concept of food sustainability. Additionally, this approach allows for the development of new food products with potential health benefits for consumers [1].

This study aimed to develop two innovative food products based on melon by-products and to evaluate their nutritional composition, total phenolic content, and antioxidant potential. In 2022, melon producers and distributors provided the samples used in this study. The peels were dehydrated and the seeds were oven-dried. Both were then ground into flour and roasted. Using these flours, two cakes were developed: one topped with peel flour (cake A) and the other topped with seed flour (cake B). A control cake was also developed. Nutritional composition was determined analytically, while energy value and available carbohydrates were calculated. Antioxidant activity and total phenolic content were determined using spectrophotometry. Consumer acceptability was also evaluated.

The cakes produced contained levels of  $6.42 \pm 0.2$  (control cake),  $7.58 \pm 0.3$  (cake B) and  $9.20 \pm 0.0$  g/100 g (cake A) of total protein. Dietary fibre levels ranged from  $1.19 \pm 0.1$  g/100 g (control cake) to  $6.94 \pm 0.0$  g/100 g (cake B). According to Regulation (EC) No. 1924/2006 on nutrition claims, cake A can be considered a source of fibre ( $\geq 3$  g/100 g) and cake B can be considered rich in fibre ( $> 6$  g/100 g). The incorporation of melon by-products also enhanced both the antioxidant activity and phenolic content of the cakes. Both products presented satisfactory results in terms of consumer acceptability.

Overall, these findings highlight the potential of incorporating melon by-products into nutritionally improved and appealing foods. Simultaneously, by-products are valued, reducing their environmental impact while increasing their economic and social impacts, aligned with the principles of sustainable production and consumption.

### References

[1] M. A. Silva *et al.*, Food Function, 15, 2024, 1899.

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