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CHESTNUT PEELS: FROM A FOOD WASTE TO A VALUABLE AND FUNCTIONAL INGREDIENT FOR CEREAL-BASED PRODUCTS

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In the last decade, research dealing with the use of chestnut has received considerable interest due to chestnut's promising potential to produce high quality and healthy products with high nutritional value. It can be consumed as fresh, boiled, or roasted. Besides, chestnut is also ground into flour which can be used in the production of diverse high quality products such as bread, cookie, cake, breakfast cereals and also pasta. A new perspective may be the use of the chestnut pericarp, now considered a waste and that represents from 6 to 10 % of the fresh fruit weight, in formulations for cereal-based products. The use of this by-product, naturally rich in antioxidants and fibers, may represent a way to enhance the chestnut supply chain, making it more sustainable, as well as giving an improved nutritional contribution to the chestnut products. In the present research work, feasibility of the addition of chestnuts' pericarp in several cereal-based products was studied, particularly bread, biscuits and pasta. Studied products were prepared both with wheat flour and in a gluten-free version. Chestnut peels showed a great water absorption capacity with great effects on dough rheological properties regardless the product. Similarly, chestnut peels deeply influenced the appearance of the enriched products with a darker colour and the presence of brown particulates. Moreover, chestnut peels enhanced also total antioxidant content of all tested products. In general, chestnut peels showed many challenges in gluten-free formulations as it competed with other thickening agents for water and hindered the formation of a network responsible of the final product structure. Finally, considering all the tested products, the optimal chestnut peels addition varied from 3 to 7 g/100g of the recipe.

Biography

Maria Paciulli has completed her MSc and PhD in Food Science and Technology at the University of Parma, Italy. She is currently working as a Postdoctoral Fellow in the Department of Food and Drug of the same University, in the area of Food Technology. Her research activity is primarily focused on the investigation of the effect of processing and formulation on the physio-chemical and thermal properties and stability of food products, with a particular focus on oil and fats, bakery products and vegetables. She is an author of 24 papers in reputed journals and 3 book chapters, along with participation in several national or international conferences.

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