



Wheat Bran Valorisation for Improved Nutritional Profile and Technological Function

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Abstract

The established use of wheat bran (WB) as a food ingredient is related to its nutritional properties locked in the bran layers (testa, aleurone and pericarp). Concurrently, its technological impairment has also impeded its use in product formulations. For two decades, several modifications have been investigated to combat this problem. The various pre-treatment methods to valorise WB for improved nutritional, structural and functional properties were reviewed. These pre-treatments include bioprocessing (enzymatic hydrolysis and fermentation with yeasts and bacteria), mechanical (milling), thermal (dry heat, extrusion, autoclaving), and chemical treatments. This review condenses the current knowledge on the single and combined impact of various WB pre-treatments on the antioxidant profile, fibre solubilisation, hydration properties, microstructure, chemical properties, and technological properties in breadmaking. Current utilisation of modified WB in breadmaking and recommendations for future studies are also discussed.

Keywords: wheat bran, valorisation, modification, flavour profile, hydration properties.

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