Abstract: Development of Functional Spaghetti Enriched in Bioactive Compounds Using Barley Coarse Fraction Obtained by Air Classification

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Barley byproducts obtained by air classification have been used to produce a different barley functional spaghetti, which were compared to different commercial whole semolina samples. Total, insoluble and soluble fiber and β-glucan contents of the barley spaghetti were found to be greater than those of commercial samples. Furthermore, it was proved that barley spaghetti reached the FDA requirements, which could allow these pastas to deserve the health claims “good source of dietary fiber” and “may reduce the risk of heart disease”. When the barley coarse fraction was used, a flavan-3-ols enrichment and an increase of antioxidant activity were reported, while commercial samples showed the absence of flavan-3-ols and a high presence of phenolic acids and tannins. Whole semolina commercial spaghetti had a significantly higher content of phenolic acids than semolina spaghetti samples. Besides, it was observed that when vital gluten was added to the spaghetti formulation, phenolic compounds were blocked in the gluten network and were partially released during the cooking process.

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