

[J Agric Food Chem](#). 2011 Sep 14;59(17):9366-77. Epub 2011 Aug 16.

Metabolomics and food processing: from semolina to pasta.

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Source

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Abstract

The objective of this study was to investigate the metabolite variations during industrial pasta processing (from semolina to dried pasta) for five different commercial products. Up to 76 metabolites were detected. Significant differences were observed between wholemeal and refined pasta samples, with the wholemeal pasta richer in many classes of compounds such as phytosterols, policosanols, unsaturated fatty acids, amino acids, carotenoids, minerals, and so on. Significant differences were also observed between samples of refined pasta apparently similar for the actual parameters used for the assessment of pasta quality. The results indicated that a number of metabolites undergo a transformation during the pasta-making process depending on the processing conditions adopted. The approach used in this work shows the high potential of metabolite profiling for food investigations with regard to process-related transformation, safety, and nutrition.

PMID:

21812406

[PubMed - in process]