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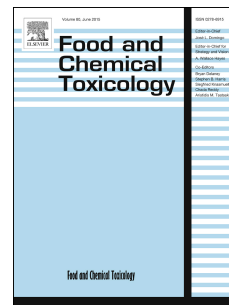
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Arsenic speciation in food in Belgium. Part 2: Cereals and cereal products

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B-3080 Tervuren, Belgium.**Abstract**

This study reports results of total arsenic (As_{tot}) and various As species in 75 samples of cereals and cereal products bought on the Belgian market in 2009. In addition to rice, the samples were wheat, pasta, bread and some breakfast cereals.

The inorganic species arsenite (As^{III}) and arsenate (As^V), and the organic As compounds dimethyl arsinic acid (DMA) and monomethyl arsonic acid (MA) were the only As species detected. Mean As_{tot} was 0.150 ± 0.089 mg kg⁻¹ in rice and 0.012 ± 0.008 mg kg⁻¹ in the non-rice cereals. The inorganic arsenic fraction ($As_i = As^{III} + As^V$) dominated in all samples and was in the range 55% - 100%. Significantly higher As_{tot} and As_i concentrations were observed in white rice and brown rice compared to Basmati rice. Within the group of non-rice cereals bread and pasta showed significantly lower concentrations compared to wheat. All 30 rice samples were conform to the European maximum limits for As_i , laid down in Commission Regulation 2015/1006. Although regulatory limits certainly can help to protect consumer health, our results suggest that the currently fixed European maximum levels are, in Belgium, not expected to have any impact on the human exposure to As_i , which is a known carcinogenic substance.

Keywords: inorganic arsenic; rice; rice products; wheat; European maximum limit, dietary exposure

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