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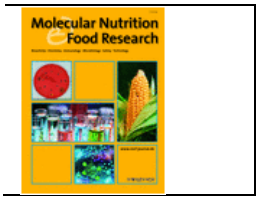

Research Article

Occurrence of type A trichothecenes in conventionally and organically produced oats and oat products

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Abstract

Among cereals, oats are known to be very frequently contaminated with type A trichothecenes and so they can play a major role in the exposition of the consumer to these mycotoxins. Seventy representative oat samples of both conventional and organic production were drawn at mills and at wholesale stage according to Commissions Regulation (EC) No 401/2006 and analyzed for nine type A trichothecenes by LC-MS/MS. High contamination rates were found for most of the toxins in conventional as well as in organic products (*e. g.* 100% for T-2 toxin or 99% for HT-2 toxin). The mean concentration of T-2/HT-2 (sum of the toxins) was 17 ± 18 μg/kg (mean ± SD) in all samples, 27 ± 21 μg/kg in conventional, and 7.6 ± 4.6 μg/kg in organic products, respectively. The highest T-2/HT-2 level has been determined in conventionally produced oat flakes (85 μg/kg). The mean level of T-2 tetraol (9.5 ± 7.7 μg/kg) in all samples was found to be even higher than that of T-2 (5.1 ± 6.0 μg/kg), whereas levels of T-2 triol, 4,15-diacetoxyscirpenol, 15-monoacetoxyscirpenol, and neosolaniol were considerably lower. For oats and oat products from organic farming contamination levels of T-2, HT-2, T-2 triol, T-2 tetraol, and neosolaniol were significantly lower. The results are discussed with respect to possible health risks for the consumer.