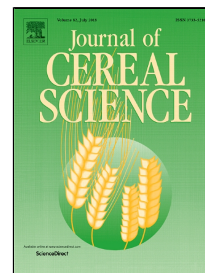


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Detection of cystine and cysteine in wheat flour using a robust LC-MS/MS method

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Abstract

An effective and simultaneous liquid chromatography-tandem mass spectrometry (LC-MS/MS) method was developed for the first time, with the aim of quantification of cysteine and cystine in wheat flour. Developed LC-MS/MS method showed good linearity ($R^2=0.99$) with very low LOD and LOQ values as 2.0 µg/kg and 7.0 µg/kg for cystine, 3.0 µg/kg and 8.0 µg/kg for cysteine, respectively. Favorable repeatability and reproducibility were achieved. Developed highly sensitive LC-MS/MS method was successfully applied for the detection and quantification of cystine and cysteine in wheat flour samples. Cystine and cysteine contents were determined as quite similar and appropriate for 25 types of wheat flour. An unusual or unexpected quantity wasn't observed for cystine and cysteine contents in all experiments.

Keywords: Cystine, Cysteine, bakery, chromatography, tandem mass, flour, wheat

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