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## OPTIMIZATION OF A GAS CHROMATOGRAPHIC METHOD FOR ACRYLAMIDE ANALYSIS APPLICATIONS FOR RISK MANAGEMENT

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### Abstract

The paper proposes a simple and less expensive gas chromatographic method for analyzing acrylamide in food and reveals comparative results regarding the acrylamide content in commercial and home toasted bread. Validation of the method has been achieved by establishing parameters linearity, limit of detection (LOD = 0.1 mg/L), limit of quantization (LOQ = 0.5 mg/L), precision, stability. Run-to-run precision was determined by carrying out five replicate determinations for three acrylamide standard solutions: 0.5 mg/L (RSD = 2.95 %), 1.0 mg/L (RSD = 1.05 %), and 5.0 mg/L (RSD = 0.84 %). The day-to-day precision was calculated by performing five replicate determinations in three different days: 0.5 mg/L (RSD = 2.54 %), 1.0 mg/L (RSD = 1.31 %), 5.0 mg/L (RSD = 1.16 %). The applicability of the method was demonstrated by analyzing different types of commercial and home toasted bread and by establishing the dependence of acrylamide levels on toasting time.

*Key words:* acrylamide, gas chromatography, toasted bread, toasting time

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