

Title Rapid Method for Determination of Phosphine Residues in Wheat
Author Francesco Longobardi, Michelangelo Pascale, Marco Silvestri and Angelo Visconti
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Abstract

A rapid method for spectrophotometric determination of phosphine residues in wheat has been developed. Phosphine-fumigated wheat kernels were added with 10% sulfuric acid in a gas-tight flask, and phosphine was released into the headspace by microwave irradiation. Phosphine was spectrophotometrically determined after reaction with silver nitrate. A good linearity of the calibration curve was obtained with wheat spiked at levels ranging from 0.035 to 0.230 µg/g with correlation coefficient (r) of 0.9965 and a detection limit of 0.026 µg/g. The total time of analysis was 10 min. Headspace analysis was also performed by micro-gas chromatography (GC) with a thermal conductivity detector (micro-GC-TCD). Results obtained with the spectrophotometric and micro-GC-TCD methods showed good correlations with those obtained with the most widely used GC with nitrogen-phosphorus detector with r values of 0.9940 and 0.9946, respectively.

<http://www.springerlink.com/content/a518h05414383114/fulltext.pdf>