Title: **Analysis of pesticide residues in tea using accelerated solvent extraction with in-cell cleanup and gas chromatography tandem mass spectrometry**

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Abstract

A fast, simple and easily automated method was developed for the simultaneous determination of pesticide residues in tea using accelerated solvent extraction (ASE) with in-cell cleanup and gas chromatography-tandem mass spectrometry (GC-MS/MS). This method integrates extraction and cleanup processes into a single step, by adding a clean-up sorbent along with the sample into the extraction cell. The efficiency of this method was characterized in terms of its recovery (with values ranging from 90 to 98%), repeatability along with intermediate precision (showing relative standard deviations less than 15%), and sensitivity (providing detection limits between 0.001 and 0.007 μg g^{-1}). The concentration range of the pesticide residues found in the sample is from 0.008 to 0.161 μg g^{-1}. The relative expanded uncertainty achieved for this method ranged from 24% to 34%. The results indicate that the proposed method is easy and reliable for the determination of pesticide residues in tea, and it is suitable for use in routine analysis.