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Rapid Method for the Determination of 180 Pesticide Residues in Foods by Gas Chromatography/Mass Spectrometry and Flame Photometric Detection

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Abstract:
A method was established for the determination of 180 pesticide residues in fruits and vegetables. The procedure involved extraction with acetonitrile, followed by a salting-out step with anhydrous $MgSO_4$ and NaCl. Removal of sediment and water was performed simultaneously by centrifugation. Co-extractives were removed with a double-layered SPE column, and graphitized carbon black and primary secondary amine (GCB/PSA) solid phase extraction cleanup cartridge. The eluate was determined by GC/FPD and GC/MS without further cleanup. Recovery data were obtained by fortifying 9 matrices at 0.05–0.1 μg/g. Recoveries of 180 pesticides were mainly 70–110% and the relative standard deviation (RSD) was below 25%. Limits of detection ranged between 0.01 and 0.05 μg/g for tested pesticides. © Pesticide Science Society of Japan

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