

New Rapid and Simple Method for Pesticide Residues Determination in Olive-Surface

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A new rapid and simple method for the determination of pesticides more widely used in olive-growing has been developed. A total of five pesticides, three herbicides, diuron, terbuthylazine and diflufenican, and two insecticides, phosmet and dimethoate, were determined. The method is based on a surface leaching of olives by using an automatic shaker. The pesticides residues were extracted in organic solvents during ten minutes. Three solvents were studied, acetonitrile, methanol and various mixtures of water:methanol. The leaching conditions were optimised according to full factorial design. Extracts with pesticide residues were analysed by "UPLC-MS/MS" (ultra performance liquid-chromatography coupled a TQD-mass spectrometer) without a clean-up step. Samples of olive free of pesticides were spiked to obtain the calibrations curves. The limit detection values (LOD) of the studied pesticides were less than 5ppb ($\mu\text{g}\cdot\text{L}$) in all cases, with percentages of recovery between 80-99% and RSD lower than 20%. These results were compared with those obtained by QuEChERS method, a widely used method for pesticide determination in food analysis. Results obtained were similar, moreover, the new method for the determination of pesticides residues in olives was faster and simpler than QuEChERS method.