Title Rapid pesticide analysis, in post-harvest plants used as animal feed, by low-pressure gas chromatography–tandem mass spectrometry

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Abstract

A wide range of pesticides used to control pests in vegetables have been determined in agricultural plant waste from beans, watermelons, and melons grown in greenhouses located in a predominantly agricultural area in Southeast Spain (Almería). Analysis of the pesticides was carried out by low-pressure gas chromatography (LP-GC) with mass spectrometry in tandem (MS–MS) mode, after extraction of the lyophilized samples with dichloromethane. The influence of the sample matrix on the analysis was avoided by use of matrix-matched standards. Linearity, detection limit (*LOD*), quantitation limit (*LOQ*), recovery, and precision for each pesticide were calculated. The most frequently encountered pesticides were endosulfan (>73% of the analyzed samples) and buprofezin (>55% of the samples), followed by cypermethrin, pirimifos-methyl, bifentrin, and chlorpyrifos (>30% of the samples). The pesticide found at the highest concentration level was endosulfan (223.33 mg kg^{-1}) in a watermelon sample.