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Application of commercially available fenitrothion-ELISA kit for soil residue analysis

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Abstract:

A commercially available fenitrothion-ELISA kit, designed for residue analysis of crop samples, was applied in a method development study using 10 different soils spiked with the target pesticide. Recoveries determined by gas chromatography (GC) were compared to those in ELISA analysis. Recoveries in ELISA were biased high in six soil samples which had low pH and high sand content. The range of recoveries in 10 soils was from 87 to 163% while, in contrast, GC recovery was 72–86%. Soil matrix, such as high-molecular-weight organics and divalent cations, influenced the ELISA reaction to cause an overestimation of recovery.

Keywords:

ELISA, fenitrothion, soil matrix, pesticide residue monitoring



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