RESIDUES OF ACETOCHLOR HERBICIDE IN SOYBEAN AND SOIL IN MOLDAVIAN FIELD

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Abstract

Herein, we report the results of a study aimed at estimating the potential of acetochlor for translocation into soybean plants and groundwater and its retention in one of the most common soil in Romania. The chloroacetanilide herbicide acetochlor was applied at three different dosages, i.e. 2.2 L ha^{-1} (Recommended dose), 3.1 L ha^{-1} (40%+Recommended dose) and 3.96 L ha^{-1} (80%+Recommended dose) as a pre-emergent spray on soybean crop at 3 days after sowing in the experimental field of Ezăreni – The Experimental Farm of the Agricultural University Iasi. Analyses were performed using Gas chromatography mass spectometry (GC-MS). Extraction of field soil samples taken from different depths (0-5, 5-10, 10-15 and 15-20 cm) at different times after herbicide application, showed that all applied doses moved deeper and increased dose (80%+Rd) affected the persistence of acetochlor in the top layer increasing its half-life to 5 days. Dissipation followed a first order kinetics. At harvest, soil and plant samples were found to contain acetochlor below maximum residue limits (MRL) following the 80%+ recommended dosage.

Key words: acetochlor, adsorption, residues.