Abstract
The present study was undertaken to determine the persistence of acetochlor under real field conditions at maize crop. The chloroacetanilide herbicide acetochlor was applied as a pre-emergent spray on maize crop at 3 days after sowing in the experimental field in Didactical Station Ezăreni. The herbicide acetochlor was identified and quantified from soil and maize plants based on accelerated solvent extraction (ASE) followed by GC-MS analysis. Since the herbicide was applied to the soil surface, its dissipation and degradation will vary depending on the concentration, soil type, pH, organic matter and environmental conditions. 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 from 14 to 17 days. Dissipation followed first order kinetics. The higher concentration of herbicide was found to be safe, as the residues of acetochlor were below maximum residue limits (MRL) at the end of maize crop season.

Key words: acetochlor, herbicide, persistence