



Retention and transport of mecoprop on acid sandy-loam soils

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Interaction with soil components is one of the key processes governing the fate of agrochemicals in the environment. In this work, we have studied the adsorption/desorption and transport of mecoprop in four acid sandy-loam soils with different organic matter contents. Kinetics of adsorption and adsorption/desorption at equilibrium have been studied in batch experiments, whereas transport was studied in laboratory columns. Adsorption and desorption are linear or nearly-linear. The kinetics of mecoprop adsorption are relatively fast in all cases (less than 24 h). Adsorption and desorption were adequately described by the linear and Freundlich models, with KF values that ranged from 0.7 to 8.8 L n $\mu\text{mol}^{1-n} \text{kg}^{-1}$ and KD values from 0.3 to 3.6 L kg⁻¹. High desorption percentages (>50%) were found, indicative of a high reversibility of the adsorption process. The results of the transport experiments showed that the retention of mecoprop by soil was very low (less than 6.2%). The retention of mecoprop by the soils in all experiments increased with organic matter content. Overall, it was observed that mecoprop was weakly adsorbed by the soils, what would result in a high risk of leaching of this compound.