



Moisture Effects on the Desorption of Diuron and Terbutylazine from natural Soils

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This work was initiated to study the effects of climate induced soil water status variations which can reach extreme values under natural conditions on the sorption process of hydrophobic organic compounds. Based on the classical slurry batch methodology an approach was developed that allowed the fast and careful complete drying of soil suspensions (microwave technique). Classical adsorption experiments were followed by three desorption steps with and without drying cycles. Drying and rewetting enhanced the hysteresis effect between ad- and desorption isotherms and Freundlich adsorption coefficients increased from 5.9 to 16 and 5.2 to 21 over three drying cycles for diuron and terbutylazine respectively. Assuming the validity of a dual stage adsorption process, model evaluation suggests that drying is as a shrinking-like process leading to conformational changes of the dominant sorbent (soil organic matter) which restrict the intra-micro-particle diffusion. Rewetting only leads to a partial recovery of the diffusional pore space.