



Raindrop induced crust formation

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Rainfall simulators are widely used to study soil erosion because all parts of the erosion process can be simulated with them. Small-scale laboratory rainfall simulator was used to examine the detachment phase of the erosion and study the redistribution trend of the organic and mineral components of the soil. Splash erosion often creates crust on the soil surface that decreases porosity and infiltration. Crusts have crucial role in physical soil degradation processes, erosion and crop production fall. Intensive rainfall on a recently tilled Regosol and a Cambisol plots detached the aggregates and the occurred runoff scattered the individual particles on the surface. Oriented thin sections from the various morphological types of surface crusts were made similar as a thin section from any rock but during the preparation the samples were saturated often with dilute two-component adhesive to solidify the soil to preserve the crust. Raman spectroscopy and XRD analysis measurements are in progress in order to identify spatial changes in organic matter and mineralogical composition among the crust layers. Preliminary results suggest the separation of the mineral and organic soil components. The lighter organic matter seems to be enriched in the soil loss while the heavier minerals are deposited and stratified in the deeper micromorphological positions of the surface. The understanding of this selectivity is necessary in soil loss estimation.