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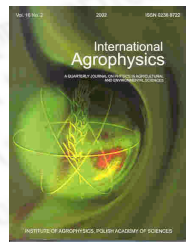
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Impact of the long-term straw supply on loess-derived soil structure

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abstract Keeping plant residues on the field and incorporating them instead of removing or burning them, is a well-known practice in soil and water conservation. One of the objectives of this management is to reduce the susceptibility of the soil surface to slaking and hence sealing. The non-removal of plant residues, starting in 1965, decreased the slaking of the soil surface after 10 years, which was clearly visible in March, 1976. To check whether the removal of plant residues affects only the top layer of a soil, undisturbed and disturbed samples of 4 horizons per profile were taken and analyzed in spring, 1999. Texture, saturated hydraulic conductivity, bulk density, pore size distribution, and aggregate stability (by means of a percolation test) as well as a few soil chemical parameters were determined. Almost no improvement of soil structural parameters was detected by keeping residues on the field. The susceptibility to slaking was the only parameter being significantly reduced. Against the expectations, this occurred on the plot where plant residues were removed.

keywords plant residues, slaking, soil structural properties, organic matter

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