



Interrill erodibility of soil organic matter

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The enrichment of organic matter in interrill sediment is well documented. However, the respective roles of soil organic matter (SOM) and interrill erosion processes for the enrichment are unclear. In this study, SOM content of sediment generated on two sandy soils from Shropshire, one farmed conventionally, the other organically, was tested. The main difference between the tested soils was their organic matter content and structural stability. Artificial rainfall of different intensities was applied to the soils to determine the effects of rainfall characteristics on SOM enrichment in interrill sediment. SOM enrichment varied with rainfall intensity. On the conventionally farmed soil, sediment SOM decreased with increasing intensity, while increasing with increasing intensity on the organically farmed soil. SOM erosion was not related to soil erodibility. The differences in SOM erosion are attributed to effects of soil SOM on soil surface structure and thus the interaction of rainfall, running water and the soil material. The results show that enrichment of organic matter in interrill sediment is not directly related to either SOM content or soil interrill erodibility, but is dominated by interrill erosion processes and thus changing with rainfall intensity and runoff rates. As a consequence, organic matter erodibility should be treated as a separate, rainfall dependent, variable in erosion models.