



Mini rainfall simulation for assessing soil erodibility

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Abstract:

The mini rainfall simulator is a small portable rainfall simulator to determine erosion and water infiltration characteristics of soils. The advantages of the mini rainfall simulator are that it is suitable for soil conservation surveys and light and easy to handle in the field. Practical experience over the last decade has shown that the used 'standard' shower is a reliable method to assess differences in erodibility due to soil type and/or land use.

The mini rainfall simulator was used recently in a study on soil erosion in olive groves (Ferrandina-Italy). The propensity to erosion of a steep rain-fed olive grove (mean slope $\sim 10\%$) with a sandy loam soil was evaluated by measuring runoff and sediment load under extreme rain events. Two types of soil management were compared: spontaneous grass as a ground cover (GC) and tillage (1 day (T1) and 10 days after tillage (T2)). Results indicate that groundcover reduced surface runoff to approximately one-third and soil-losses to zero compared with T1. The runoff between the two tilled plots was similar, although runoff on T1 plots increased steadily over time whereas runoff on T2 plots remained stable.