

Contribution to the Study of the Rill Density Effects on Soil Erosion: Laboratory Experiments

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Abstract : Rills begin to be generated once overland flow shear capacity overcomes the soil surface resistance. This resistance depends on soil texture, the arrangement of soil particles and on chemical and physical properties. The rill density could affect soil erosion, especially when the distance between the rills (interrill) contributes to the variation of the rill characteristics, and consequently on sediment concentration. To investigate this point, agricultural sandy soil, a soil tray of 0.2x1x3m³ and a piece of hardwood rectangular in shape to build up rills were the base of this work. The results have shown that small lines have been developed between the rills and the flow acceleration increased in comparison to the flow on the flat surface (interrill). Sediment concentration increased with increasing rill number (density).

Keywords : artificial rainfall, experiments, rills, soil erosion, transport capacity

Conference Title : ICEBESE 2018 : International Conference on Environmental, Biological, Ecological Sciences and Engineering

Conference Location : Paris, France

Conference Dates : November 08-09, 2018