

# Turkish Journal of Agriculture and Forestry

Turkish Journal

of

Agriculture and Forestry

Effect of Subsequent Simulated Rainfalls on Runoff and Erosion

Günay ERPUL, Mustafa R. ÇANGA

Soil Science Department Faculty of Agriculture, University of Ankara, 06110, Dışkapı,  
Ankara-TURKEY

 [Keywords](#)  
 [Authors](#)



[agric@tubitak.gov.tr](mailto:agric@tubitak.gov.tr)

[Scientific Journals Home Page](#)

**Abstract:** Hydraulic properties of soils and soil erodibility are expected to vary after rainfall because of the impact energy of raindrops. Resistance both to rainfall detachment and to runoff detachment might differ after rainfall, and temporal changes in soil erodibility take place. The main objective of this study was to evaluate the effects of subsequent rainfalls (namely the 2nd rainfall) on runoff and erosion, especially sheet and splash erosion. Forty rainfall events in laboratory condition were conducted on Kule clay loam and Musaagili silt loam. Two consecutive rainfalls at an intensity of 60 mm h<sup>-1</sup> were applied to soil trays at a slope of 30%, and soil surface was allowed to dry between events. Statistical analyses showed the main effects of rainfall sequence and soil type, as well as their interaction significantly changed the runoff, percolation, runoff sediment, and splash amounts from two soils. The runoff sediment was higher in the subsequent rainfall than those of the 1st rainfall. This was related to the decreased hydraulic conductivity and the following increased runoff. However, the splash was higher in the 1st rainfall. Decrease in splash amount was attributed to the increase in runoff depth in the 2nd rainfall and to the surface seal formation after the 1st rainfall.

---

Turk. J. Agric. For., **23**, (1999), 659-666.

Full text: [pdf](#)

Other articles published in the same issue: [Turk. J. Agric. For., vol.23,iss.6.](#)