

A portable rainfall simulator was used to measure the runoff rates and soil losses from a freshly ploughed luvisol at Katumani, and anitosol at Kabete, on a 6 deg slope at varying rainfall intensities. The soil losses from storms of 50 and 100 mm/h intensities, in which a total of 50 mm rain was applied to plots in the wet moisture state, varied from 0.8 to 1.4 metric tons/ha at Kabete and 8.5 to 13.9 metric tons/ha at Katumani. The percentage runoff from these storms was 15 to 17 per cent at Kabete and 67 to 71 per cent at Katumani. The much greater runoff rates from the Katumani soils were shown to be due to surface capping caused by degradation of the surface structure. It has been proposed that soil erodibility K factors of 0.4 and 0.04 could be used for the Katumani and Kabete soils respectively in the Universal Soil Loss Equation.