

## Interrill erosion and roughness parameters of vegetation in rangelands

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In recent decades, the micro-region of Paraíba state, Brazil, has undergone extensive conversion of native ecosystems to agriculture, mainly pastures for grazing. This land use change has resulted in greater erosion of the region's soils. We sought to determine the effects of land use change on interrill erosion of an Ultisol at various slope gradients (15%, 25%, 35% and 45%) and cultivated with pastures (*Brachiaria decumbens*). A randomized block design was employed with 4 slope categories and 5 replicates, totaling 20 experimental plots with dimensions equal to 1 m wide by 2 m in length, bounded by aluminum sheets. The mean flow velocity (V) and the rate of infiltration (Ti) in the pasture varied significantly with the increase in slope, contributing to increasing erosion rates until 35% slope. The largest soil loss was associated with X AND Y. For the steepest slope (45%), lesser soil loss was observed, chiefly because the crop cover offset the effects generated by the increase in the slope and also due to the by removing or decapitation of A horizon by previous erosion events, so the interrill erosion occurred directly on the B horizon, which is more cohesive and resistant. The vegetation drag coefficient (CD') of the pasture increased as a function of plant cover effects on turbulent flow. With increasing flow depth, there was a greater energy flow between the mass of water and the plant structure, which is reflected in the decrease of the vegetation resistance force ( $F_{\text{drag}}$ ).