



## **Landscape benching and formation of soil banks along field borders due to soil redistribution by tillage within agricultural fields**

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Soil redistribution by conventional tillage practices has been recognised as a process of intense landscape transformation. Field limits represent physical barriers that interrupt soil flux by tillage. These lines of zero flux produce a net soil accumulation on the upslope side or a net soil loss on the lower slope side. When a cross-slope boundary between fields is located at mid-slope positions, opposite balances of net soil loss or soil gain take place in the two sides of the boundary with the consequent formation of a linear step along the boundary. Location of field boundaries determines the spatial patterns of soil redistribution as well as the final morphology of the slope profiles. This paper presents a field experiment performed to simulate the formation of banks along field boundaries located at mid-slope positions. The general objective is to simulate the formation of soil banks, as they are formed applying the common tillage operations of an agronomical year, and repeated them for a given number of years. A total of 19 experimental plots (fields with defined boundaries) covering a range of slope gradients from 3 to 20 % were used, in which tillage were conducted following different directions, along the maximum slope or contouring, moving soil up-, down- or up-down. They are presented the results after applying six sequences of tillage operations, which are equivalent of six consecutive agronomical years. Results include the evolution of the topography near the field borders, and the spatial patterns of soil variability properties within each agricultural field.