



Rainfall simulation experiments in ecological and conventional vineyards.

Alexander Adrian (1), Christine Brings (1), Jesús Rodrigo Comino (1,2), Thomas Iserloh (1), and Johannes B. Ries (1)

(1) Trier University, Physical Geography, Trier, Germany (brings@uni-trier.de), (2) University of Málaga, Physical Geography & Land Management Research Group, Department of Geography, Málaga, Spain.

In October 2014, the Trier University started a measurement series, which defines, compares and evaluates the behavior of runoff and soil erosion with different farming productions in vineyards.

The research area is located in Kanzem, a traditional wine village in the Saar Valley (Rheinland-Palatinate, Germany). The test fields show different cultivation methods: ecological (with natural vegetation cover under and around the vines) and conventional cultivated rows of wine.

By using the small portable rainfall simulator of Trier University it shall be proved if the assumption that there is more runoff and soil erosion in the conventional part than in the ecological part of the tillage system. Rainfall simulations assess the generation of overland flow, soil erosion and infiltration. So, a trend of soil erosion and runoff of the different cultivation techniques are noted.

The objective of this work is to compare the geomorphological dynamics of two different tillage systems. Therefore, 30 rainfall simulations plots were evenly distributed on a west exposition hillside with different slope angles (8-25°), vegetation- and stone-covers.

In concrete, the plot surface reaches from strongly covered soil across lithoidal surfaces to bare soil often with compacted lanes of typical using machines.

In addition, by using the collected substrate, an estimation and distribution of the grain size of the eroded material shall be given. The eroded substrate is compared to soil samples of the test plots.

The first results have shown that there is slightly more runoff and soil erosion in the ecological area than on the conventional part of the vineyard.