Quantitative comparison of soil erosion, runoff and infiltration coefficients using the same small portable rainfall simulator in German and Spanish vineyards

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Small portable rainfall simulations have been used for decades to compare and quantify the relationship between the factors influencing runoff generation and soil erosion. Though, the comparability of these researches is problematic due to the different simulators and methods applied.

In order to enable a quantitative comparison of the soil erosion processes of four study areas (Valencia and Málaga in Spain, Ruwer-Mosel valley and Saar-Mosel valley in Germany) similar type of portable rainfall simulator (with a square metal frame of 0.45 m x 0.45 m, one nozzle Lechler 460 608, four telescopic aluminium legs, a rubber tarpaulin to avoid wind influences, a circular test plot with 0.28m2) with similar methodology (rainfall intensity of 40 mm h-1, during 30 minutes of time duration, collecting the samples with intervals of 5 minutes) was used.

Older and younger vineyards with conventional and ecological planting system were being compared with each other. All together the results of 77 simulations have been analysed and additionally the Spearman's Correlation Coefficient was calculated for each study area to identify the relationship between the different parameters.