



Aserpiado – an ancient water conservation measure revisited

Wolfgang Duifhuizen (1), Jantiene EM Baartman (1), Gema Guzman (2), and Jose A Gomez (2)

(1) Wageningen University, Soil Physics and Land Management Group, Wageningen, The Netherlands (jantiene.baartman@wur.nl), (2) Institute for Sustainable Agriculture, CSIC-IAS, Cordoba, Spain

In Andalucía, southern Spain, farmers have been applying a water conservation measure in vineyards called 'Aserpiado' (plural: Aserpias) for centuries. This measure consists of creating multiple micro-depressions within a field in either all or in every second inter vines rows, using a tillage tool. The main objective of implementing aserpiado is to let water infiltrate on-site, thereby increasing soil moisture and plant available water, and decreasing runoff and associated losses of water and soil. Even though this system has traditionally been used in dryland areas, the functioning and efficiency of the system are still not well known. This study aimed at investigating the functioning of the aserpiado system at hillslope scale in a commercial vineyard belonging to the Appellation of Origin Montilla-Moriles in Córdoba. For this purpose, rainfall simulations at micro-plot scale and infiltration tests were performed in the field at different positions of the hillslope to determine the runoff coefficient of the untreated rows and the infiltration rate at the aserpias, respectively. These trials were complemented with a detailed description of the soil profile and aserpias and a sampling survey to describe and characterize some soil properties, relevant for this study. Preliminary results and field observations indicate that high-intensity rainstorms cause high runoff coefficients in the untreated rows. Further analysis of the data obtained from the different trials would quantify the degree in which aserpias, if well made, would be able to decrease hortonian runoff in vineyards. As this study is ongoing, more detailed results will be presented on the poster.