Soil dynamics and surface activity on recently diversified organic vineyards

Manuel Seeger, Thomas Iserloh, Felix Dittrich, Sören Thiele-Bruhn, Katharina Frey-Treseler, Cord Treseler, Johan Six and Roman Hüppi

1Physical Geography, Trier University
2Soil Science, Trier University
3Soil Science, Trier University
4Weingut Dr. Frey, Kanzem
5Dep. of Environmental Systems Science, ETH Zürich

Major challenge on Central European steep sloping vineyards (>30°) is weed control underneath the grapevines. It affects the development of fungal diseases, the soil water availability and impacts soil sustainability. Mechanical weed control is applied in low-input farming several times per growing season. This causes the development of bare, disturbed soil underneath the grapevines, which then is prone to soil erosion.

The aim of this study is to assess the influence of intercropped Origanum vulgare and Thymus vulgaris under organic wine farming in steep slope vineyards on crop production and soil physicochemical properties.

Most of the soil erosion in 2018 is from one extreme event. Due to soil tillage, soil erosion increased after herb planting in rows (compared to monocrop lines). Because of a high drought, tillage under the herbs in 2018 was particularly intense. This resulted in very high erosion rates.

Due to erosion, SOC is low and the amount of coarse fragments are high under the vines. We expect a reduction of soil erosion after consolidation of herbs in 2019. Nitrous oxide fluxes are low, but a peak is measurable during the extreme rain event. Concerning total CU and microbial biomass treatments cannot be distinguished.

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