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Comparison of water soil erosion on Spanish Mediterannean abandoned land and agricultural fields under vine, almond, olives and citrus

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The abandonment of agricultural lands is considered as a global dynamic with on- and off-site consequences on the soil mostly ignored (Vanmaercke et al., 2011), which enhance land degradation processes by increasing water soil erosion (Cammeraat et al., 2010; Keesstra et al., 2012) and by decreasing biodiversity (Brevik et al., 2015; Smith et al., 2015). However, there is a lack of information at pedon scale about the assessment and quantification of which environmental elements activate or avoid water soil erosion after its respective abandonment.

Small portable rainfall simulators are considered as useful tool for measuring interrelated soil erosion processes such as splash, initial rainfall-runoff processes, infiltration, sediment yield, water turbidity or nutrient suspensions (Cerdà, 1999; Iserloh et al., 2013; Rodrigo Comino et al., 2016). 105 experiments were conducted with a small portable rainfall simulator (rainfall intensity of 40 mm h^{-1} in 30 minutes) in four different land uses and their respective abandoned land: i) citrus and olives (Valencia), almonds (Murcia) and vines (Málaga).

We studied the main environmental factors that may determine water soil erosion during the performed experiments: slope, vegetation cover, rock fragment cover, soil properties (texture) and hydrological responses (time to runoff and infiltration generation).

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