



Soil water erosion on Mediterranean vineyards. A review based on published data

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Soil water erosion on cultivated lands is a severe threat to soil resources in the world (Leh et al., 2013; Zhao et al., 2013). In particular, Mediterranean areas deserve a particular attention because of their edaphic, topographic and climatic conditions. Among the cultivated lands, concerns have arisen about vineyards because, aside representing one of the most important crop in terms of income and employment, they also have proven to be the form of agricultural land that causes one of the highest soil losses (Tropeano et al., 1984; Leonard and Andrieux, 1998; Ferrero et al., 2005; Cerdà et al., 2007; Blavet et al., 2009; Casalí et al., 2009; Novara et al., 2011; Martínez Casasnovas et al., 2013; Ruiz Colmenero et al., 2013; Tarolli et al., 2014). Although the topic of soil water erosion on vineyards has been studied, it still raises uncertainties. These are due to the i) high complexity of processes involved, ii) different methodologies used to analyze them and iii) analyses carried out at different spatial and temporal scales. At this regard, this work aims to evaluate the impact of factors controlling erosion such as rainfall characteristics, topography, soil properties and soil and water conservation techniques. Data derived from experimental plots have been reviewed. At first, what emerges is the difficulty of comparing erosion rates obtained with different methodologies and at different spatial scales. Secondly, all the factors demonstrate to have a strong impact on soil erosion but a 'general rule' upon which to consider one factor always predominant over the others does not come out. Therefore, this work supports the importance of monitoring soil water erosion by field measurements to better understand the relationship between the factors. Variables like rainfall characteristics, topography and soil properties are much more difficult to modify than the soil and water management techniques. Hence, future researches are needed to both recommend the best soil and water management techniques to the farmers and implement soil erosion mitigation policies at appropriate spatial scales.

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