

## The positive impact of European subsidies on soil erosion rates in orange plantations

Saskia Keesstra (1,2), Antonio Jordán (3), Agata Novara (4), Tani Taguas (5), Paulo Pereira (6), Eric C Brevik (7), and Artemi Cerdà (8)

(1) Soil Physics and Land Management Group, Wageningen University. The Netherlands. saskia.keessta@wur.nl, (2) Civil, Surveying and Environmental Engineering, The University of Newcastle, Australia, (3) MED\_Soil Research Group. Dep. of Crystallography, Mineralogy and Agricultural Chemistry, University of Seville, Spain, (4) Department of Scienze Agrarie e Forestali, University of Palermo, viale delle scienze, Italy, (5) University of Córdoba, Department of Rural Engineering, Córdoba, Spain, (6) Environment Management Laboratory, Mykolas Romeris University, Lithuania, (7) Department of Natural Sciences, Dickinson State University. USA, (8) Soil Erosion and Degradation Research Group, University of Valencia, Department of Geography, Valencia, Spain. artemio.cerda@uv.es

Soil erosion in orchards and vineyards has been found non-sustainable due to bare soils due to the use of herbicides and tillage (Novara et al., 2011; Taguas et al., 2015; Ochoa et al., 2016; Rodrigo Comino et al., 2016a; 2016b; 2016c). Citrus plantations in sloping terrains are also non-sustainable from the soil erosion point of view due high erosion rates and the damage caused on infra-structures (Cerdà et al., 2009; 2009b; Cerdà et al., 2011; Pereira et al., 2015). This is not uncommon in Mediterranean type Ecosystems (Cerdà et al., 2010) but there is a need to reduce the soil and water losses to achieve sustainability (Brevik et al., 2015; Keesstra et al., 2016). The use of mulches, geotextiles, catch crops, and vegetation was found to be very successful as a sustainable strategy to reduce the soil losses (Giménez Morera et al., 2010; Mwango et al., 2016; Nawaz et al., 2016; Nishigaki et al., 2016; Prosdociami et al., 2016). Nowadays, chipped branches are applied in orchards and vineyards because of European subsidies; however little scientific data is available on the impact of the chipped branches mulch on soil erosion. In an orange plantation in Eastern Valencia, at the L'Alcoleja experimental station the impact of these chipped branches was tested under 45 mm h<sup>-1</sup> rainfall simulations on laboratory plots of 0.5 m<sup>2</sup> under with different covers of chipped branches. The results show that with a cover of 20 % with chipped branches soil erosion reduces by 78 %.

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