



Aleppo pine afforestation in the Masis del Caroig, Eastern Spain. The impact on soil water repellency and infiltration rates.

Artemi Cerdà (1), Óscar González Pelayo (1), Antonio Jordán (2), Jorge Mataix Solera (3), and Xavier Úbeda (4)

(1) Soil Erosion and Degradation Research Group, Department of Geography, University of Valencia, Valencia, Spain. artemio.cerda@uv.es / Oscar.Gonzalez-Pelayo@uv.es/ www.soilerosion.eu, (2) MED_Soil Research Group. Dep. of Crystallography, Mineralogy and Agricultural Chemistry, University of Seville, Spain. ajordan@us.es, (3) Environmental Soil Science Group. Department of Agrochemistry and Environment. Miguel Hernández University, Avda. de la Universidad s/n, Elche, Alicante, Spain, Jorge.mataix@umh.es, (4) Grup de Recerca Ambiental Mediterrània (GRAM) Universitat de Barcelona, Facultat de Geografia i Història, Montalegre 6, 08001 Barcelona, xubeda@gmail.com

Paloma Hueso and co-workers (2014; 2015) researched the impact of soil treatment on soil erosion and organic matter recovery in Mediterranean types ecosystems and they demonstrated that the surface wash and the soil quality is determined by the soil management. Afforestation and proper management with fertilizers, mulches and vegetation recovery, are common strategies to fight against soil erosion in Mediterranean type ecosystems (García Orenes et al., 2010; Barbera et al., 2012; García Orenes et al., 2012; Mekuria and Aynekulu, 2013; Jiménez et al., 2015; Tengberg et al., 2015; Tesfaye et al., 2015). However, Hueso et al., (2014; 2015) did not paid attention to the impact that water repellency can trigger in the runoff generation and water repellency when soils increase the organic matter.

In Eastern Spain, afforestation with Aleppo Pine (*Pinus halepensis* Mill.) was very popular during the XX century, although little is known about its impact on soil hydrology. Many of the impacts of afforestation were found positive (García et al., 2000; Maestre et al., 2003; Bellot et al., 2004; Maestre and Cortina, 2004; Chirino et al., 2006; Querejeta et al., 2008;). This research shows the impact of *Pinus halepensis* Mill. on soil water repellency, in comparison to the natural scrubland and the cover of *Quercus ilex*.

Within the El Teularet-Sierra de Enguera Experimental Station five types of vegetation covers were selected: *Pinus halepensis*, *Quercus ilex*, *Quercus coccifera*, *Rosmarinus officinalis*, *Thymus vulgaris* and *Brachypodium retusum*. The Water Drop Penetration Time method (Cerdà and Doerr; 2007; 2008) was applied. A hundred drops were applied at the soil surface, 1, 2, 5 and 10 cm depth 5 times along the year 2013 under different soil moisture content. The results show that the water repellency of the soils is: *Pinus halepensis* > *Quercus coccifera* > *Rosmarinus officinalis* > *Quercus ilex* > *Thymus vulgaris* > *Brachypodium retusum*. This is related to the higher organic matter content and the production of water repellent substances by the vegetation.

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