



Analyzing the vegetation response under different treatments after wildfires in NE Spain

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Fire is a natural factor of landscape evolution in Mediterranean ecosystems. The socio-economic changes that occurred in the last decades have contributed to an increase in forest fires (Shakesby, 2011). There was found a change in the fire regimes in terms of frequency, size, seasonality, recurrence as well as fire intensity and severity (Keeley, 2009), which resulted in severe effects on soils, water and vegetation (Guénon et al., 2013).

Fire affects soil properties directly by the heat impact (Aznar et al., 2013), and the ash cover (Cerdà and Doerr, 2008) and the reduction of the plant cover (Neary et al., 1999). The lack of vegetation and the heating promotes changes in the soil organic matter content (González-Pérez et al., 2004), on the structural stability (Mataix-Solera et al., 2011), on the hydrophobic response (Bodí et al., 2012), and on the infiltration capacity (Cerdà, 1998a). This is why the vegetation cover and the litter are key factors on soil erosion after forest fires (Prats et al., 2013). Besides, the ash plays an important paper in the soil protection after the forest fire and after the first storms and winds (León et al., 2013; Pereira et al., 2013).

The objective of this experiment is to asses the vegetation response after a forest fire and the impact of vegetation recovery on soil erosion. The experiment consisted in a sampling of a linear transect of 10 m with samples each 2 m, under different slope position and aspect. To measure the soil erosion rates we used rainfall simulation experiments (León et al., 2013).

The experiments were carried in Castejón (UTM 30T, X671106, Y4644584) in a forest burned in 2008, in the Zuera Mountains, both located in the north of Zaragoza province (NE Spain). The soils on limestone parent material are Rendzic Phaeozem (IUSS, 2007) and the texture of Ah horizons of soils developed on limestone is sandy-loam (Badía et al., 2013).

The result shows fast and successful vegetation regeneration in the north-facing slopes, and a delayed recovery on the south-facing slopes. The soil erosion control treatments shown a very efficient response when Chipped branches covered the soil.

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