



CHANGES IN SOIL STRUCTURE AND ORGANIC MATTER AFTER REPEATED EXPERIMENTAL FIRES IN A MEDITERRANEAN FOREST SOIL

J. Campo, J.L. Rubio, V. Andreu, E. Gimeno-García & O. González.

Centro de Investigaciones sobre Desertificación - CIDE (CSIC, Universitat de València, Generalitat Valenciana), Camí de la Marjal, s/n, Albal, 46470 Valencia, Spain

The immediate and subsequent changes induced by a repeated fire on soil structure and organic matter were evaluated under canopy and on bare soil on a set of plots in the Permanent Field Station of La Concordia, Valencia, Spain.

In 1995, two fire treatments based on the addition of different biomass amounts were applied. Three plots were burned with high fire intensity (T1), three with moderate intensity (T2), and three unburned plots were used as control (T3). In 2003, plots corresponding to the fire treatments were burned again without addition of extra biomass, giving low fire intensities. In the eight-year interval between fires, plots remained undisturbed.

During the first six months after the repeated fire, structural stability shows two trends with differences statistically significant. The higher values are observed under canopy and for T1 on bare soil. Structural stability of T2 is increased around 4% despite the low temperatures reached. Organic matter differences under canopy of burned

plots, minimal before the repeated fire, are increased after it, showing T2 the highest values. At the end of the study period, organic matter contents of bare soil reached almost the same values for all treatments.