



Spatial characterization of soil properties and influence in soil formation in oak-grassland of Sierra Morena, S Spain

Andrea Román-Sánchez (1), Francisco Cáceres (1), Remi Pédèches (1), Juan Vicente Giráldez Cervera (1,2), and Tom Vanwallegem (1)

(1) UNIVERSIDAD DE CÓRDOBA, CIF: ESQ1418001B, CÓRDOBA, Spain (o92rosaa@uco.es), (2) Institute of Sustainable Agriculture. CSIC, CÓRDOBA, Spain

The Mediterranean oak-grassland ecosystem is very important for the rural economy and for the biodiversity of south-western European countries like Spain and Portugal. Nevertheless these ecosystems are not well characterized especially their soils. In this report soil carbon has been evaluated and related to other properties.

The principal factors controlling the structure, productivity and evolution of forest ecosystems are bedrock, climate, relief, vegetation and time. Soil carbon has an important influence in the soil and ecosystem structures. The purpose of this study is to determine the relationship between relief, soil properties, spatial distribution of soil carbon and their influence in soil formation and geomorphology.

This work is part of another study which aims to elucidate the processes involved in the soil formation and to examine their behaviour on long-term with a modelling. In our study area, located in oak-grassland of Sierra Morena, in Cordoba, S Spain, have been studied 67 points at 6 depths in 262 hectares in order to determine carbon content varying between 0-6%, soil properties such as soil depth between 0-4 m, horizon depth and the rocks amount in surface. The relationship between the soil carbon, soil properties and the relief characteristic like slope, aspect, curvature can shed light the processes that affect the mechanisms of bedrock weathering and their interrelationship with geomorphological processes.