



Influence of climate and vegetation on soil organic matter in forest soils

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The evolution of forest soils is related to the environmental conditions and the nature of the vegetation as source of soil organic matter. Studied soils are located in the Guadarrama Mountain, in the region of Madrid, in Spain. The main characteristics of these soils (*Inceptisols*) are studied. They have an *umbric* epipedon and are influenced by different altitudes, vegetation and moisture regimen. The aim of this research is to study the influence of climate and vegetation on soil organic matter content of a holm oak (*Quercus ilex* sp. *Rotundifolia*) soil with *mesic-xeric* pedoclimate, an oak (*Quercus pyrenaica*) soil with *mesic-xeric* pedoclimate and a pine (*Pinus sylvestris*) soil with *mesic-udic* pedoclimate. Three soils were classified as *Inceptisols*. In the soil under pine the moisture regimen is *udic*, the content in organic matter is high and the percentage of base saturation is <60 % in the horizon A from 25 to 75 cm, therefore according to the Soil Taxonomy, the soil is classified as *Humic Dystrudepts*. The soil under holm oak has same characteristics than the previous, except the moisture regimen that is *xeric*, so that this soil is classified as *Humic Dystroxepts*. The soil under oak tree has a moisture regimen *xeric* and a high content in organic matter, but the percentage of base saturation is >60 % in a horizon between 25 and 75 cm, so that this soil is classified as *Humic Haploxerepts*.