



Soil management and compost effects on salinity and seasonal water storage in a Mediterranean drought-affected olive tree area

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ABSTRACT

In this 4-year study, the effects of (a) sustainable soil management with weed mowing during spring and addition of compost without tillage (SUST) and (b) intensive management with soil tillage and use of herbicides (INT) on soil properties related to water storage and salinity were determined in a drip-irrigated olive orchard in Crete, Greece. Higher annual levels of soil moisture were observed in SUST (+12%) as compared with INT, as well as in the rainy period (October–March) (+40%) as compared with the irrigation period (April–September). Mean soil moisture content was increasing by soil depth. Soil pH was unaffected while increased electrical conductivity was observed in the superficial soil layer (0–10 cm), as compared with deeper soil layers as well as in SUST, as compared with INT. The present study describes a sustainable olive orchard management system that reduces soil erosion risk, enhances water storage in the root zone and, through mineral nutrient recovery at the local scale, contributes to energy savings by reducing use of chemical fertilizers.

Keywords: Climate change; *Olea europaea* L.; Olive mill waste; Recycling; Soil depth

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