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Effect of compost amendment on soil organic matter and humic substances

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Organic soil amendments are increasingly being examined for their potential use to improve soil functions and quality. We studied the effect of compost amendment on soil organic matter (SOM) and humic substances. The study was carried out on Luvic Calcisol in the Valencian Community (East Spain) used as a citrus fruit orchard. Four plots were amended at dose 0, 6, 12 and 36 Mg ha-1 of rice residue and sewage sludge compost. Seven soil samples for each treatment at depths of 0-10 and 10-20 cm were taken in the first seven months after application. Soil characteristics, SOM, mineral nitrogen, total nitrogen, NH4+-N, and fulvic and humic acids were determined. The results demonstrated that the use of organic compost considerably increases SOM, total nitrogen and the humic substances such as the applied dose. The level of humic substances remained without significant variations during the experimental period. The dose of 36 Mg ha-1 proved the most efficient. We would like to thank Spanish government-MICINN for partial funding and support (MIMAN project 4.3-141/2005/3-B and MICINN project CGL2006-09776).