Geophysical Research Abstracts
Vol. 15, EGU2013-1033, 2013
EGU General Assembly 2013

The effect of urban waste compost applied in a vineyard, olive grove and orange grove on soil proprieties in Mediterranean environment

Agata Novara (1), Luciano Gristina (1), Giuseppe Bono (2), Fabio Guaitoli (2), Giuseppe Pasciuta (2), and Antonino Santoro ()

(1) Dipartimento dei sistemi agro-ambientali- University of Palermo , Italy , (2) Assessorato delle risorse agricole e alimentari-Palermo

The application to soil of compost produced from urban wastes not only could improve the soil properties but also could be a solution for disposal of large quantities of different refuses.
Knowledge on compost characteristic, soil properties as well as on mineral crop nutrition are important to proper management of fertilization with compost and to understanding the impact on C and N dynamics in field. We present the results of soil physical and chemical changes after the application of urban waste compost in three different orchards (vineyard, olive grove, and orange grove) in Mediterranean environment (Sicily). The compost was applied on November 2010 and samples were collected 1 month after application for two years. Soil pH, carbon content, weight of soil aggregate fractions, nitrate content were examined during the trial, comparing with adjacent no fertilized plot.
The application of compost caused a decrease in soil organic carbon stock of 14% and 28% after two years in vineyard and orange grove, respectively, while a significant increase under olive grove was registered.
Nitrate monitoring showed for all crops high content of Nitrate for most of the year that involved SOC stock depletion. This was not observed in olive grove, where soil received further C input thanks to soil management with cover crop. In two years of observations there were no significant change in soil physic properties.