عنوان مقاله:

Composted Olive Mill By-products: Compost Characterization and Application on Olive Orchards

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خلاصه مقاله:

Olive mill by-products could be composted and applied to olive orchard soils. These practices solve the problem of these wastes disposal and reduce the need for chemical fertilizers. Therefore, the aims of this research were: (i) proposing ‘on-farm’ composting process of different olive mill waste mixtures; (ii) investigating the chemical, physical, and microbiological characteristics of produced composts; (iii) evaluating the agronomical performance of the composts. Two on-farm composting trials were carried out in Southern Italy by using “two-phase” and “three-phase” olive mill wastes. The obtained composts were analyzed for their main characteristics and were spread in two different olive orchards (Nocellara and Leccino). At the end of field trial, soil properties, olive tree yield, and oil production were determined. The results highlighted that both composts reached a chemical composition in line with the thresholds established by the Italian fertilizers legislation for “green wastes compost”. When the two compost piles became stable and mature, their microbial properties reached similar values. Also, the results suggested the efficiency of the composting process and good hygienic conditions of the matrices. Soil application of composted olive mill by-products increased olive yields on average by ۹% compared to the untreated soils. Both olive orchards showed good results in productive parameters. In particular, oil ha-۱ increased by ۱۶۶.۴ and ۱۷۹.۹ kg in treated olive orchards, compared with untreated soils. However, more experimental data might be needed to confirm the effects of compost application in the long time and on different olive orchard soils.

کلمات کلیدی:

Microbial cultures, Olive-oil industrial sector, Olive trees yield, Olive waste composting, Soil fertility