

## **Organic wastes as substitute of inorganic fertilization in tomato crop**

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### **Abstract**

The use of organic wastes (OW) as alternative to inorganic fertilizers is very convenient since they slowly release significant amounts of nutrients, improve soil physical and microbiological properties and reduce soil borne diseases without the use of chemical control. In this work, carried out within the WASTEREUSE Project (Life10 ENV/GR/595), tomato was cultivated in greenhouse under different fertilization treatments: organic+mineral fertilization, mineral and only organic, in order to evaluate the effect of two OW on crop yield and soil quality in comparison with the use of traditional inorganic fertilization. One compost from sheep and goat manure (R1) and other from a mixture of manure+alperujo+olive pruning (R2) were added to a loamy soil from SE Spain either, alone or in combination with 25% or 50% of a Hoagland solution (MF), which was also used alone (100%) as traditional mineral fertilization for greenhouse tomato cultivation. Both, R1 and R2 gave lower yields than inorganic fertilization when applied alone. However, R1+50% MF gave the highest yields, followed by 100% MF and R2+50% MF. Tomato yield obtained with 50% and 25% MF used alone improved with the addition of both composts indicating a beneficial effect of the organic amendments on plant growth. Soil microbiological quality, reflected by microbial biomass C, soil respiration and dehydrogenase activity was also improved by composts addition.

*Keywords: organic wastes, tomato crop, inorganic fertilization, crop yield, soil microbiological quality*

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