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Agricultural use of the digested sludge obtained from the synergic anaerobic digestion two phase temperature and O₃ process in waste water treatment plants

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The STO3RE project Objective was to demonstrate a new concept of Waste Water Treatment Plants, promoting high-added value uses for sewage sludge and agroindustrial co-substrates, through an innovative Join Management technique, protecting waters against pollution (caused by nitrates), avoiding eutrophication episodes due to diffuse sources and producing energy to be self-sustained. In this work the applicability as soil organic amendment of the digested sludge obtained from the application of this innovative and cost effective technology (anaerobic digestion two phase temperature coupled to ozone oxidation) was evaluated. Two different plant types were selected for testing: i) young and 10 years old almond trees (GF677 almond rootstock, a peach x almond hybrid with good behavior in dry conditions) and ii) *Cynara cardunculus*, which can be grown in hot, dry Mediterranean climates and it is of use in ecosystem restoration and biomass. Treatments were applied in triplicate to 100 m² plots at rates of 170 kg N/ha/year (dose 1) and 100 kg N/ha/year (dose 2). Non-amended plots and plots amended with conventional sewage sludge were used as controls. Plant yield and different soil physical, chemical, biochemical and microbiological parameters were determined.

Biography

C Garcia is the Professor of Research of the Spanish National Research Council (CSIC). He has more than 190 indexed publications and has been responsible researcher of different national and European Projects. He is Founder and President of the Spanish Group of Soil Enzymology (1998-2005), Chair of the Soil Biology Section within the Spanish Society of Soil Science since 2010, Professor of Master's and PhD courses at the University of Murcia and Academician of the Academy of Sciences of the Region of Murcia. He served as Director of CEBAS-CSIC (2005-2009), Member of the Commission of the Area of Agricultural Sciences of CSIC since 2006 and Coordinator of this Commission for 2010-2014.

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