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EXPLOITATION OF OLIVE TREE PRUNINGS AS RAW MATERIAL FOR THE PRODUCTION OF HIGH QUALITY COMPOST

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Abstract

Within the several million tones of waste agricultural biomass that is being produced annually in Greece, Olive Tree Prunings (OTP's) rank first with 1.4 - 3 million tons per year. The present study examines composting as a waste management strategy for the recovery of the organic matter of OTP's, the production of a high quality compost (high concentration in N, P, K and minerals, elimination of any toxic factor) and the reduction of the CO₂ and other GHG emissions that result from the practice of open burning in the fields. To this end, appropriate plastic buckets were used for composting of shredded OTP's either on its own or in co-composting with grasses and seaweeds. The effect of the composting period (winter and summer) on the process was also examined. A variety of parameters were monitored, including temperature, humidity and oxygen content and various physicochemical and agronomic parameters. The quality differences among the produced composts, the course of the composting process during two different periods and the determination of their completion time were determined. The resulting composts were characterized by a neutral alkaline pH, high organic matter content and high macrominerals content. The quality of the mature composts for use in plant growing was determined by a germination evaluation method. Our study indicates that the final composts can potentially exhibit a high agronomic value and be suitable for soil application and reintroduction into the production system.

Key words: agricultural residues, composting, Grass, Olive Tree Prunings (OTP), seaweeds

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