



Composting of beached residues of *Posidonia oceanica* (L.) Del.

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Posidonia oceanica (L.) Del. (PO) is an endemic marine plant of the Mediterranean Basin that constitutes wide submarine grasslands. The latter are involved in the oxygenation of the water, fauna protection and littoral erosion prevention. As an alternative to the landfill, composting could play an important role in the recycling of beached residues, even though the Italian legislation does not allow that. Leaves and fibers are the typical residues of the marine plant available on the beaches. The present paper reports the preliminary results of the composting of PO leaves and fibers mixed with olive pruning wood and green residues, with and without the addition of microbial starter. The beached leaves and fibers have been characterized separately by the mean of pH, ash content, electrical conductivity (EC), organic carbon and total nitrogen contents in order to decide the quality and the quantity of other raw materials to add for the composting. Two piles (about 3.5 m³ each) have been prepared mixing only recently beached leaves of PO to olive pruning and green waste. One of them has been inoculated with a microbial starter in order to test the efficacy of selected thermophilic microorganisms in composting a biomass rich of PO leaves. Other two piles of the same volume have been prepared with a mixture of recently beached leaves and fibers of PO, olive pruning and green waste. Again, one heap has been inoculated with thermophilic microorganisms. According to temperature records, the inoculation of the piles has speeded up slightly the degradation of the biomasses during the active composting time, while, during the curing phase, the same heaps have shown

lower temperatures in comparison to the not inoculated ones. The same trend has been recorded for the piles made of leaves alone in comparison to the ones made of fibers too, according to the lower degradability of the latter. Physico-chemical analyses of the final composts have shown that PO leaves give the best quality compost, especially when inoculated with the microbial starter. Finally, a rational management of the wettings during the entire composting process can help to reach a final EC of all composts not detrimental to soil health.

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