



Production of a Quality Compost from Agroindustrial Wastes

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The main objective of this paper is to review the activity of research carried out during the last five years in the framework of the National Project on Citrus Production.

The main objective of the work was to verify the possibility to produce a quality compost from citrus processing industry by-products which are produced in huge amount (about 600,000 tons) every year in a short period of time (December – April), that otherwise must be carry to the discharge.

Matrices employed to produce compost were: a) pastazzo, a mixture of oranges pulp and peel, that is the main residue of squeezing treatment of citrus processing industry; b) sludge, produced by washing fruits and machineries; c) horticulture market waste obtained from the minimally processed fruit and vegetables; d) olive oil husks and e) pruning material of ornamental green.

Combining the matrices between them, four different piles were prepared over time: a) pastazzo, sludge and pruning material; b) pastazzo and pruning material; c) pastazzo, pruning material and olive husks; d) pastazzo, pruning material and horticultural wastes.

Periodically, during all the period of the composting process, the piles were monitored, following the main parameters, such as temperature, water moisture, total organic carbon content, C/N ratio, humification parameters, isoelectric-focusing of extracted organic matter. Not all the piles showed a regular trend on temperature due probably to a low level of water content of the mixture during the composting process. The hu-

mification parameters showed a similar process trend, that indicated the stabilisation of organic material took place in the piles accordingly. The matrices employed, at the end of the process, led to a final product characterised by high humification, which is the indicator of the most stabilised organic fraction. Finally, the ecotoxicological characteristics of pastazzo, sludge and pruning material and of the produced composts were assessed by the evaluation of the phyto-geno toxic effects induced in *Vicia faba* seedlings grown on a soil amended with different doses of the studied biomasses.