



LIFE + Environment Policy and Governance

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Project: Best practices for agricultural wastes (AW) treatment and reuse in the Mediterranean countries

www.wastereuse.eu

Action 4 - Development of alternative agricultural practices-Lab experiments (Italy)

Deliverable "Characterization of wastes treated by different technologies regarding their suitability for agricultural use and especially for vegetable and ornamentals cultivation under Italian climatic conditions"

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Executive summary

Action 4 includes lab experiments to evaluate the suitability of treated (composts) and untreated solid wastes and wastewaters for agricultural purposes, i.e. to promote crop production and quality, and the potential effect on soil properties. Data from Action 2 (“Initial assessment of existing AW treatment technologies”) were used in order to make an initial screening of suitable wastes that are produced in Italy, collect data about their main characteristics and finally transfer them to the laboratory. Characterization of wastes was carried out through targeted chemical analysis based on the reference Italian regulations that apply to the sector of wastes.

30 kinds of solid and liquid wastes were collected and analyzed with regards to 30 chemical parameters in order to get a clear indication about the absence of critical parameters that could have impaired the overall quality of soils when mixed with the selected wastes and, consequently, to negatively affect the growth of the plant species used for the experimentation. Around 900 analyses were carried out in the time span between January and March 2013.

Based on the results of analyses and of *in vitro* tests, two solid wastes (composts) were chosen based on the absence of hazardous compounds and of phytotoxic effects on the plant used as indicators for the trial (cress). Such composts were applied in mixture with natural soils, zeolite and fertilizer in pot cultivation trials (see Deliverable “Guide for open field and greenhouse cultivation of the tested crops (Italy)” and Deliverable “Evaluation of effects of wastes application on different Italian soil types. Definition of maximum annual load of nutrients and organic constituents”) to develop specific agricultural practices for the most common cultivated crops in Italy with specific regards to potted plants which represents a key element of the agricultural production in the Albenga area (North-Western part of Italy) where the Italian partners are based.