

**“Best practices for Agricultural Wastes
(AW) treatment and reuse in the
Mediterranean countries”**



LIFE10 ENV/GR/594

Project co-funded by EC LIFE+ Environment Policy &
Governance



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Beneficiaries contribution: 705,400 €

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WASTEREUSE main objectives are:

- **to evaluate innovative and traditional technologies for agricultural waste (AW) treatment regarding their suitability for crop cultivation**
- **to develop alternative cultivation practices for the most widely cultivated crops in the Mediterranean region**
- **to protect soil quality from the disposal of AW, reduce carbon footprint and increase competitiveness of Mediterranean agricultural products**

Coordinating Beneficiary

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Activities so far

Initial assessment of existing AW treatment technologies (Action 2) has been successfully implemented during the first 10 months of the project. All available data regarding funded projects focused on the development/implementation of technologies for the treatment of AW produced in the Mediterranean region have been collected, aiming to assist the selection of the most suitable, environment friendly, low cost technologies to be used for the development of alternative cultivation practices for the main water-nutrient consuming crops in Spain and Italy.

Actions 3 and 4 regarding the development of alternative agricultural practices in Spain and Italy, respectively, have been completed by March 2013. Untreated and treated wastes have been evaluated; their suitability for crop production and quality improvement and their potential effect on soil properties was also assessed.

Soils from 35 different cultivated and non-cultivated areas of Italy, Spain and Greece where olive trees, cereals, tomatoes, potatoes etc. are grown, have been collected and characterized. Around 60 treated and untreated AW (compost from plant residues and organic fraction of urban solid waste, pig slurry treated with fly larvae, biochar from vegetal wastes, olive mill wastewaters, alperujo, sheep manure, etc.), have been collected and analyzed for 30 selected parameters in CCIAA/CERSAA and CEBAS-CSIC laboratories.



Experimental field "Tres caminos" in Santomera (Murcia) - greenhouse cultivation

The potential phytotoxicity of the AW was assessed through seed germination tests using different test plants of agricultural importance for Spain and Italy. The phytotoxicity of the AW varied depending on the vegetal species used, indicating thus a different sensitivity of the seeds to various potential phytotoxic compounds present in AW.

Cultivation tests in pots have been also carried out in order to assess the suitability of selected composts for the cultivation of different plant species; barley and ryegrass in Spain, cress in Italy. Experimental results have shown that blends of soil with good quality compost (20 to 40% v/v compost) and zeolite can replace traditional peat based growing media.

Demonstration actions (5 and 6) have been initiated on April 2013 in Spain and Italy, after the completion of Actions 3 and 4, respectively. Their objective is to demonstrate the feasibility of the application of treated wastes in open field and greenhouse cultivations. The cultivation practices developed in Actions 3 and 4 will be applied at i) open field using cereals (barley and/or wheat or maize) in Spain and lettuce and cabbage in Italy and ii) greenhouse using vegetables (lettuce and tomato) in Spain and basil and ornamentals in Italy.



Basil cultivation tests in benches (up: sowing, down: 30 days after sowing), CERSAA's premises



Open field cultivation in CERSAA's premises



Cultivation of tomatoes in CEBAS-CSIC premises

A complete Life Cycle Analysis in terms of raw materials consumption, energy use and emissions as well as a Risk Analysis regarding phytotoxicity and potential quantified soil and water impacts of the options considered in Actions 3-6, is carried out by TUC. Data regarding LCA in agriculture, description of the system studied, life cycle inventory including inputs and outputs, impact categories-indicators, geological and geochemical data from the areas under study and other data are collected.

A Code of Waste Management Best Practices for Agricultural Application will be developed, by integrating the activities, outcomes and deliverables of all previous Actions to provide decision making tools and proposals for Alternative Cultivation Practices for the most common cultivated crops in the Mediterranean region (Action 8 initiated on September 2013).

The project website www.wastereuse.eu (photo library, results etc.) in 5 languages (English, Greek, Spanish, Italian and French) as well as the Facebook (<https://www.facebook.com/WasteReuseProject?fref=ts>) and Twitter fan pages are continuously updated.

Four papers have been presented so far in international conferences.

The project publishes newsletters with the most important news and results, on a six-month basis.

Other dissemination activities include presentation of the project in workshops/seminars, local and national newspapers and digital media.

A database with organizations and members from the scientific community, the agricultural sector, national authorities and the European Commission has been prepared by SIGNOSIS; so far, the networking database includes 605 contacts. A core network of around 30 individuals is prepared. Members will be reached through message board, e-mails, Skype conferences, meetings between members, workshops etc.

*For more information, please visit our website or contact us
This newsletter was prepared by TUC*

