



“Demonstration of the suitability of dredged remediated sediments for safe and sustainable horticulture production” (HORTISED)



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The HORTISED project aims at demonstrate the suitability of dredged remediated sediments as an alternative for the preparation of growing media in horticulture.

The project will demonstrate the great potentials of sediment-based growing media through the growth of pomegranate and strawberry as representative plants at farm scale in Italy and Spain.

The performance of the innovative growing media will be demonstrated by comparison with the typical production of the same fruits obtained with the use of the traditional peat-based growing media.

The HORTISED project will also highlight the current legislative and cultural reasons of hindrance to use of innovative growing substrates in horticulture.

It will produce guidelines for the safe and sustainable use of sediments as ingredients of horticultural growing media.

ACTIONS

- ◆ Determine the chemical and biological fertility by measuring the levels of nutrients, humic substances and humification degree, microbial biomass and microbial activity in the remediated sediments
- ◆ Determine the concentrations of eventual inorganic and organic contaminants and analysis of biotoxicity
- ◆ Sediment landfarming for the time required to improve the structure and homogeneity of the sediments
- ◆ Analysis of the sediments after landfarming check their properties and optimize the plant nutrition and fruit production
- ◆ Analysis of biochemical and nutritional properties in a representative number of fruits and assessment of any presence of organic and inorganic contaminants
- ◆ Analysis of morphological, biochemical and sensorial characteristics in a representative number of fruits from each cultivar and substrate types
- ◆ Evaluation of rooting, growth and development of pomegranate cuttings grown on sediment-based, mixed and peat-based substrates
- ◆ Open days at fruit growing sites in Italy and Spain to disseminate the knowledge and communicate to stakeholders, professionals and policy makers
- ◆ Spread the results with papers on scientific and popular press and with interview on mass media

RESULTS

- ◆ Evaluation of treated sediment suitability for strawberry and pomegranate cultivation in containers for fruit production and for pomegranate propagation by cuttings
- ◆ Morphological, biochemical and sensorial characterisation of two strawberry and two pomegranate cultivars grown on substrates containing treated sediments
- ◆ Assessment of the presence of heavy metals and other pollutants in strawberries and pomegranates
- ◆ Growth, development and rooting performance of pomegranate cuttings
- ◆ Improvement of the knowledge on the treated sediments and their influence on plant growth and fruit quality and safety
- ◆ Waste recycling and reduction of peat use
- ◆ Potential reduction of CO₂ emission due to the replacement of peat with treated sediments
- ◆ Possible invention of a new sediment based growth substrate as a marketable product

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PARTNERSHIP

