

ReSolVe project

Restoring optimal Soil functionality in degraded areas within organic Vineyards

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INTRODUCTION

In both conventional and organic European vineyards, it is not uncommon to have areas characterized by problems in vine health, grape production and quality. These problems are very often related to sub-optimal soil functionality, caused by an improper land preparation before vine plantation and/or management. Different causes for soil malfunctioning can include: poor organic matter content and plant nutrient availability (both major and trace elements); imbalance of some element ratios (Ca/Mg, K/Mg, P/Fe, and Fe/Mn); pH; water deficiency; soil compaction and/or scarce oxygenation.



Land preparation for planting a vineyard in Italy



Roots exposed because of soil erosion

AIMS OF THE PROJECT

ReSolVe is a transnational and multidisciplinary research project, started the 1st March 2015 (conclusion: March 2018) aimed at testing the effects of selected organic agronomic strategies for restoring optimal soil functionality in degraded areas within organic vineyard.

AGRONOMIC STRATEGIES:

- 1) Organic compost adding
- 2) Green manure with a mixture of winter legumes and cereals
- 3) Permanent cover cropping and dry mulching with mowed residue



Degraded area within vineyard



Compost preparation and adding into the soil



Different types of green manure



Permanent cover crop and dry mulching

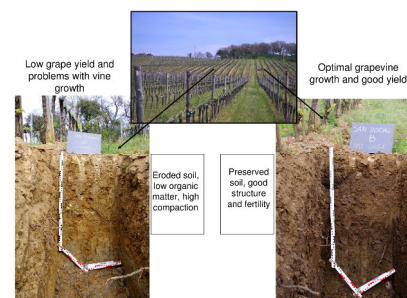


Pictures gently released by: <http://www.viticolturasostenibile.it>

Expected results

The ReSolVe project will provide guidelines for restoring optimal soil functionality. The restoring strategies will be tested to establish the efficiency regarding: i) optimizing plant growth; ii) getting higher grape yield and quality; iii) optimizing soil ecosystem services and their stability over the years; iv) better express the "terroir effect", that is, the linkage of wine quality to the environmental characteristics of the cultivation site.

The second result from the project is setting a comprehensive protocol of analyses and measurements for vineyard ecosystemic functioning assessment, tuned to European vineyard conditions.

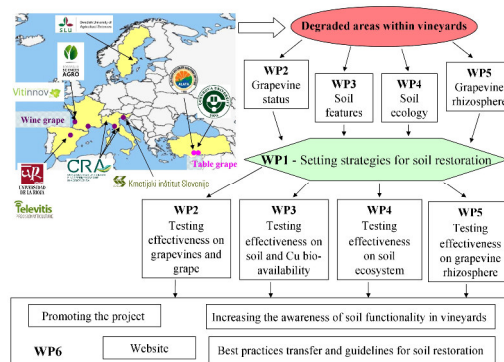


Low grape yield and problems with vine growth

Optimal grapevine growth and good yield

Eroded soil, low organic matter, high compaction

Preserved soil, good structure and fertility



Coordinator: Council for Agricultural Research and Economics, CRA-ABP (Center for Agrobiology and Pedology, Firenze) with the support of CRA-VIC (Unit of viticulture, Arezzo) and CRA-ENO (Center of oenology, Asti) - ITALY

Partners:

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The group at the kick-off meeting

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