



# CONGRESS MATERIALS

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## **ReSolVe project – Restoring optimal Soil functionality in degraded areas within organic Vineyards**

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In both conventional and organic European vineyards, it is quite common 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. Fertility related problems can often be compensated in conventional settings with externally introduced fertilizers that are not permitted in organic vineyards.

ReSolVe is a transnational and multidisciplinary research project aimed at testing the effects of selected agronomic strategies for restoring optimal soil functionality in degraded areas within organic vineyard. The term "degraded areas within vineyard" means areas showing reduced vine growth, disease resistance, grape yield and quality. These areas may have lost their soil functionality because of either an improper land preparation, or an excessive loss of soil organic matter and nutrients, erosion and/or compaction. The project, financed by Core-Organic plus program of the ERA-NET plus action (2015-2018), aims at identifying the main causes of the soil functionality loss and testing different organic recovering methods.

The different restoring strategies will implement: i) compost, ii) green manure with winter legumes, iii) dry mulching with cover crops. The strategies will be tested according to their efficiency to improve: i) plant and roots growth and well-being; ii) grape yield and quality; iii) quality of soil ecosystem services and their

stability over the years; iv) better express of the “terroir effect”, that is, the linkage of wine quality to the environmental characteristics of the cultivation site.

The project involves 8 research groups in 6 different EU countries (Italy, France, Spain, Sweden, Slovenia, and Turkey), with experts from several disciplines, including soil science, ecology, microbiology, grapevine physiology, viticulture, and biometry.

The experimental vineyards are situated in Italy (Chianti hills and Maremma plain, Tuscany), France (Bordeaux and Languedoc), Spain (La Rioja) and Slovenia (Primorska) for winegrape, and in Turkey (Adana and Mersin) for table grape.

The restoration techniques and the monitoring methodologies developed and tested during the ReSolVe project will be described in specific final guidelines. The restoration techniques will be accessible for all the European farmers and will be low cost and environmental-friendly. A protocol of analyses and measurements between the all partners will allow an effective and comparable monitoring of vineyard ecosystemic functioning in European countries.

**Keywords:** Core-organic, viticulture, soil functionality, biodiversity, soil management

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