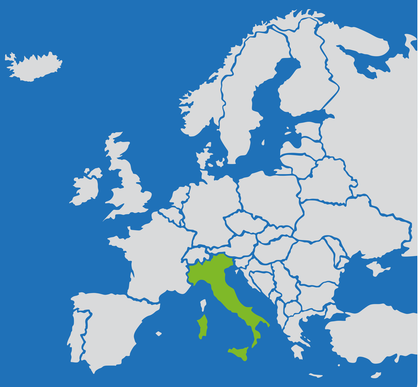
Climate resilient farming and forestry systems and water management



AGRI Innovation summit 2019

Operational Group

Evaluation of innovative adaptation strategies in vineyard and winery to the climate change

Valutazione di innovative strategie di adattamento in vigneto e in cantina al mutato contesto climatico - vinsaclima

Practical problem

Uncoupling between technological and phenolic maturity of the grapes due to climate change. Reduction of the alcohol content of wine, colour protection.

Calendar

Start: 01/01/2016
End: 01/01/2019

Budget

Total amount:
€347,870.69

Partners

CRPV (Leader), UNIBO (SM), UCSC, UNIMORE, ASTRA, TERRE CEVICO, CANTINA SOC. DI S. MARTINO IN RIO, CANTINE RIUNITE & CIV, A.A. Mora W, A.A. G Pezzi.

Objectives of the project

The project, based on a systematic approach on both levels of the production chain, wine-growing and enology, aims to transfer to manufacturers effective solutions, already tested in the process of "prototyping" to counter the impact of climate change, to limit the release of pollutants, to improve water and soil quality and to control the adversity with agronomic techniques with low impact on the environment.

Main activities

The project is composed of 2 different actions, each including 3 activities (experimental tests):

- ACTION 1) Application of sustainable agronomic methods and techniques to contrast climate change in viticulture: 1) Late pruning; 2) Canopy Management (late pruning, late defoliation); Kaolin application.
- ACTION 2) Implementation of innovative winemaking techniques: 1) Use of low temperature associated with inert gas; 2) Use of selected yeasts; 3) Early harvest.

Expected results

Reduction of vine susceptibility to abiotics, pathogens/insects-related stresses; Improvement of the quality of grapes and wine; Reduction of the release of polluting substances and improvement of water and soil quality.

Results so far/first lessons

Late pruning delayed flowering and veraison and slowed down the accumulation of soluble solids (SS) in the berry. Late trimming, also combined with late defoliation, reduced SS levels at harvest. Kaolin application decreased SS, protected bunches, preserving anthocyanins and total polyphenols. Dry ice increased the extractability of the phenolic component. Wines obtained from scalar fermentations (C. zemplinina/S. cerevisae) presented higher alcohols, a consequent increase in the overall odor, reduced alcoholic perception compared to those from standard fermentation (S. cerevisae). Acid must decreased anthocyanins and the TAV of 2% and produced a higher acidity compared to Control-wines.

Who will benefit

Farms and Cooperative structures

Supported by: RegioneEmilia-Romagna

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