

ReSolVe project

Experimental layout in La Rioja (SPAIN)

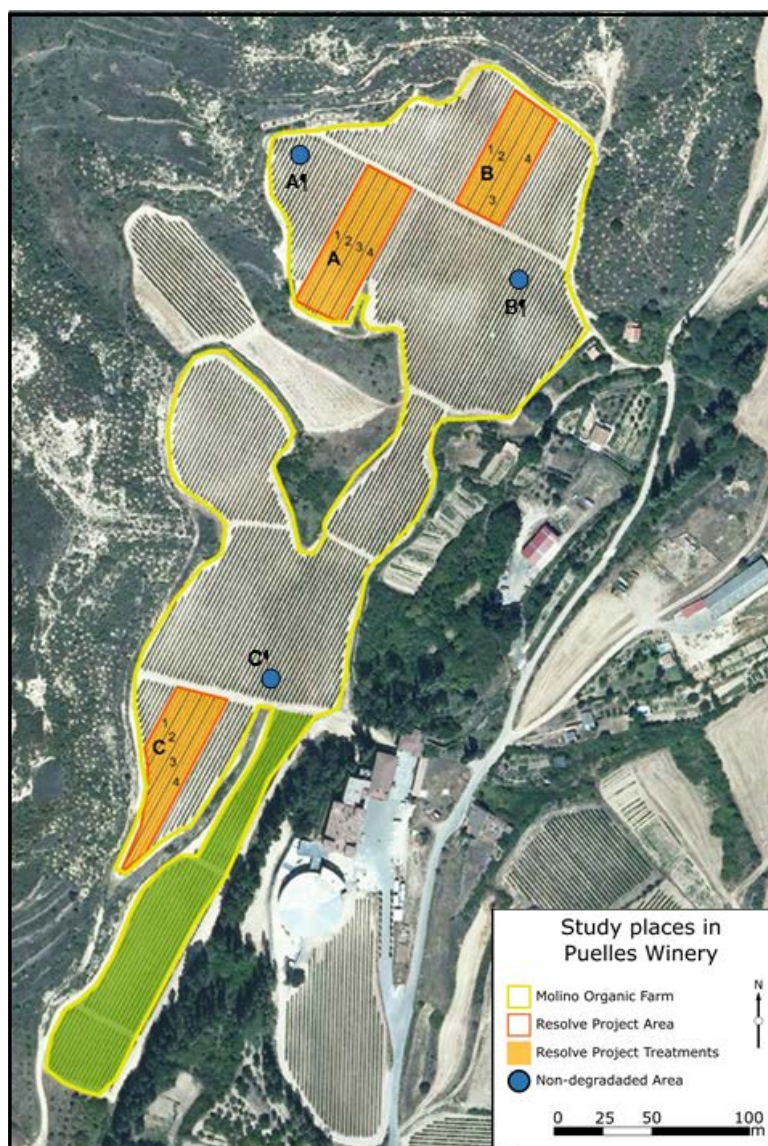


Figure 1. El Molino organic experimental vineyard and subplots (Puelles winery, Ábalos, La Rioja, Spain). Treatments applied are denoted with number from 1 to 4. (1: Control; 2: Manure; 3: Green manure (Barley & Faba bean); 4: Dry Mulching: Oats & Alfalfa) and the not-degraded sites (blue dot outside the blocks).

Vineyard	Cultivar	Year of plantation	Vine spacing	Rootstock	Standard soil management
A	Tempranillo	2004	2.3 x 1.0	110 Richter	Tillage
B	Tempranillo	2004	2.3 x 1.0	110 Richter	
C	Tempranillo	1999	2.3 x 1.0	110 Richter	

Vineyard	Slope %	Row length (m)	Row orientation	Main type of degradation	Level of degradation estimated by the farmer
A	10	30	North - South	Soil truncation	Medium
B	10	30	North - South	Soil truncation	Medium
C	8	30	North - South	Soil truncation and erosion	High

Treatments	Description	Problems
Manure	October 2016: Mature manure (cow + sheep 25 Tn/ha)	No
Green Manure	Barley + Faba bean, seeded in October 2016. Seeds: 20kg/ha for Barley and 40 kg/ha for faba bean in the three vineyard plots	Serious problems in germinations. Three sowings were needed.
Dry Mulching	Oats + Alfalfa, seeded in October 2016. Seeds: 10 Kg/ha for Oats and 10 Kg/ha for Alfalfa in the three vineyard plots.	Serious problems in germinations, 3 sowings were needed.
Control	Tillage	No
Not degraded	Tillage	No

MONITORING:

WP2 (Grapevine monitoring):

- 1) Meteorological data
- 2) RGB canopy images acquisition (manual and on-the-go)
- 3) Protocol for RGB image acquisition in the field (for all partners)
- 4) Processing of RGB images acquired in the field (for all partners)
- 5) Thermal canopy images (manual and on-the-go)
- 6) Grape yield components: yield per vine, number of clusters per plant, cluster weight and berries weight)
- 7) Grape composition: Total soluble solid, pH, total polyphenols, total anthocyanins.
- 8) Pruning weight: pruning weight per vine and number of vine shoot per plant.

WP3 (Soil monitoring): Sampling was performed in spring 2015

- 1) Soil characterization and analysis by 1.5 m profile (one for each degraded and one for each not-degraded areas).
- 2) Total organic carbon, total nitrogen and pH of the topsoil, sampled in May

WP4 (Soil ecosystem): Sampling was performed in spring 2015

- 1) Enzymes
- 2) Microarthropods
- 3) Nematodes
- 4) Microbial biomass, soil respiration and bacterial biodiversity