



Spatial variability of potential pollutants in a vineyard of the Ribeiro D.O. (Galicia-NW Spain)

Irene Varela, Eva Vidal-Vázquez, Antonio Paz-González, and Marcos Lado

Area of Soil Science, Advanced Scientific Research Center (C.I.C.A.) Faculty of Sciences, University of A Coruña, A Coruña, Spain (marcos.lado@udc.es)

The Ribeiro is one of the five wine growing D.O. in the region of Galicia (NW Spain). Wine making is the most important economic activity in the area, and in the last years, the total area covered with vineyards has steadily increased. Some common farming activities related to wine growing, including fertilization or the application of fungicides, can result in an increase of the concentrations of several elements in the soil and contribute to its degradation. At the same time, soil properties can vary between cultivated plots, or even within a specific plot, the spatial variability of some properties, including pollutants, can be highly significant. Thus, the objective of the present work was to study the concentrations of different elements and their variability in a vineyard soil of the Ribeiro D.O. Sixty five samples separated by 80 cm each were collected along a transect from the topsoil (0-20 cm) of a vineyard located in the EVEGA experimental station in Leiro (Galicia-NW Spain). Samples were transported to the laboratory, air-dried, and sieved through a 2-mm-mesh sieve. Several soil properties, including macro and micronutrients, and heavy metals were measured using DTPA as extractant. Results showed that available Fe and Mn concentrations were high or very high, possibly due to the strongly-acid soil pH. An overfertilization with P was observed, which can contribute to the eutrophication of nearby water bodies. Available Zn concentrations fluctuated between medium and high, and available Cu showed a high concentration (CuDTPA 25,69 g kg⁻¹), possibly resulting from the sustained application of fungicides including Cu in their composition. In general, the variability of the measured properties was medium or low.