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An Integrated Geophysical-geochemical Approach for Soil Precision Mapping in a Cinque Terre Vineyard (Italy)

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SUMMARY

The study has presented an integrated approach to viticultural soil characterization using geophysical and geochemical methods. The purpose of this work is to evaluate the presence of geophysical and geochemical anomalies in soil within a vineyard located in well-known Cinque Terre Zone, North-Western Italy. To this scope soil and bedrock features have been studied with electromagnetic induction (EMI) and spettrophotometry method: both the methods have allowed to realize maps of conductivity anomalies values and major chemical elements distribution respectively for the investigated area. Although still at a preliminar stage, the results presented here are encouraging, indicating a good agreement between EMI and EDXRF data. The geological heterogeneity of the study area is clearly reflected both in the conductivity data and in the geochemical composition of the near-surface soils examined. The approach applied here can be extended to larger agricultural areas used by the agrofood industry, either alone or with the aim of integrating data from standard approaches based on pedological analysis. Correlation among data of different nature can nowadays be simply examined through the use of GIS software