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## AM fungal community associated to *Vitis vinifera* cv. Pinot Nero in a Piedmont vineyard treated with integrated pest managements

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*Vitis vinifera* (L.) is an economically important crop whose value largely depends on fruit quality that can be influenced by soil microorganisms, among which arbuscular mycorrhizal fungi (AMF). AMF, able to establish symbiotic associations with vine roots, have beneficial effects on grapevine performance, including water use efficiency and replant success. Most grapevine varieties are susceptible to diseases, whose control can be performed by different approaches, including integrated pest practice (IPM). Previous reports suggested a host specificity among grapevine and AMF and the importance of soil characteristics on this association. In the present study, we examined the AMF communities in the rhizospheric and bulk soil of *V. vinifera* cv Pinot Nero, subjected to IPM, by using 454 Roche sequencing technology. The bulk and the rhizospheric soil of the grapevines were sampled before and after grape production. Genomic DNA was amplified, after extraction, according to the methods for pyrosequencing, by nested PCR using AMF specific primers of the large ribosomal subunit (LSU rDNA). Sequences were compared with both NCBI and an AMF LSU rDNA reference databases. Our data showed different AMF communities in the rhizospheric and bulk soil of *V. vinifera* and the importance of the sampling time in regulating AMF biodiversity.

### Recent Publications

1. Cesaro P, van Tuinen D, Copetta A, Chatagnier O, Berta G, Gianinazzi S, Lingua G (2008) Preferential colonization of *Solanum tuberosum* L. roots by the fungus *Glomus intraradices* in arable soil of a potato growing area. *Applied Environmental Microbiology* 74:5776-5783.
2. Gamalero E, Cesaro P, Cicatelli A, Todeschini V, Musso C, Castiglione S, Fabiani A, Lingua G (2012) Poplar clones of different sizes, grown on a heavy metal polluted site, are associated with microbial populations of varying composition. *Science of the Total Environment* 425:262-27.
3. Novello G, Gamalero E, Bona E, Boatti L, Mignone F, Massa N, Cesaro P, Lingua G, Berta G (2017) The rhizosphere bacterial microbiota of *Vitis vinifera* cv. Pinot Noir in an integrated pest management vineyard. *Frontiers in Microbiology* 8:1528.
4. Cattaneo C, Cesaro P, Spertino S, Icardi S, Cavaletto M (2018) Enhanced features of *Dictyoglomus turgidum*. Cellulase A engineered with carbohydrate binding module 11 from *Clostridium thermocellum*. *Scientific Reports* 8: 4402(2018).
5. Bona E, Todeschini V, Cantamessa S, Cesaro P, Copetta A, Lingua L, Gamalero E, Berta G, Massa N (2018) Combined bacterial and mycorrhizal inocula improve tomato quality at reduced fertilization. *Scientia Horticulturae* 234: 160-165.

### Biography

Patrizia Cesaro is a researcher at the Università del Piemonte Orientale "Amedeo Avogadro", Italy. She graduated cum laude in Biological Sciences at the University of Torino, she received a Specialization in Biotechnology Application with an evaluation cum laude and finally she received PhD in "Environmental Science, internal waters and agroecosystems" at the University of Piemonte Orientale "A. Avogadro". Her research has been focused in molecular biotechnology, she has a good expertise molecular biological techniques, in particular, PCR, real time PCR, DGGE, protein expression and purification, two dimensional gel electrophoresis, mass spectrometry, enzyme kinetics and rDNA phylogenetic analysis by bioinformatics softwares. Since 2011, Professor of Molecular Biology.

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