

Anita Zamboni

Curriculum vitae et studiorum

Born on April, 10th, 1977 Bussolengo (VR)

1. Contact details

University of Verona

Biotechnology Department

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2. Degrees

(2003-2006) Phd in Agro-Industrial Biotechnology, University of Verona. Thesis: "Correlation between resveratrol biosynthesis and the transcriptional profile of grapevine cell culture (*Vitis* spp.).

(1996-2002) Master degree in Agro-Industrial Biotechnology, University of Verona. Thesis: "Cloning and molecular characterization of expansin gene family members in *Petunia hybrida*".

3. Positions

21/12/2018- Associate professor, AGR/13, Biotechnology Department, University of Verona.

21/12/2015-20-12-2018 Assistant Professor (RTD B), AGR/13, Biotechnology Department, University of Verona.

01/12/2012-30/11/2015 Assistant Professor (RTD A), AGR/13, Biotechnology Department, University of Verona.

01/03/2010-20/12/2018 Technician, Biotechnology Department, University of Verona.

31/12/2008-28/02/2010 Technician, Department for Sciences, Technologies and Markets of Grapevine and Wine (disused), University of Verona.

01/04/2008-31/12/2008 Research fellow, Department for Sciences, Technologies and Markets of Grapevine and Wine (disused), University of Verona: "Molecular physiology of nitrogen nutrition in *Vitis* spp. Identification and functional analysis of genes involved in transport of NO_3^- e NH_4^+ and effects of nitrogen forms on the development and quality traits. Scientific responsible: Prof. Zeno Varanini

01/04/2006-31/03/2008 Research fellow, Scientific and Technology (disused), University of Verona: " Transcriptome analysis in *Vitis vinifera* through microarray experiments". Scientific responsible: Prof. Mario Pezzotti.

01/12/2005-31/03/2006 Collaboration to "Ecocypre" project. I'Istituto Agrario di San Michele all'Adige (TN). Scientific responsible: dott. Nicola La Porta

01/12/2002-30/11/2005 Research fellow at Istituto Agrario di San Michele all'Adige (TN), project: "Resveratrol". Tutor: dott. Fulvio Mattivi, scientific responsible: Dr. Riccardo Velasco.

4. Publications

International journals

- 1) Mascia M, Sega D, Zamboni A, Varanini Z. Nitrogen Starvation Differentially Influences Transcriptional and Uptake Rate Profiles in Roots of Two Maize Inbred Lines with Different NUE. International Journal of Molecular Science 2019, 20: 4056.

- 2) Sega D, Ciuffreda G, Mariotto G, Baldan B, Zamboni A, Varanini Z. FePO₄ nanoparticles produced by an industrially scalable continuous-flow method are an available form of P and Fe for cucumber and maize plants. *Scientific Reports* 2019, 9: 11252.
- 3) Livigni S, Lucini L, Sega D, Navacchi O, Pandolfini T, Zamboni A, Varanini Z. The different tolerance to Mg-deficiency of two grapevine rootstocks relies on the ability to cope with oxidative stress. *BMC Plant Biology*, 2019, 19: 148.
- 4) Zanin L, Tomasi N, Zamboni A, Sega D, Varanini Z, Pinton R. Water-extractable humic substances speed up transcriptional response of maize roots to nitrate. *Environmental and Experimental Botany* 2018, 147: 167-178.
- 5) Varanini Z, Cesco S, Tomasi N, Pinton R, Guzzo F, Zamboni A, Schloter-Hai B, Schloter, M, Giagnoni L, Arenella M, Nannipieri P, Renella G. Nitrate induction and physiological responses of two maize lines differing in nitrogen use efficiency: effects on N availability, microbial diversity and enzyme activity in the rhizosphere. *Plant and Soil* 2018, 422: 331-347.
- 6) Zamboni A, Celletti S, Zenoni S, Astolfi S, Varanini Z. Root physiological and transcriptional response to single and combined S and Fe deficiency in durum wheat. *Environmental and Experimental Botany* 2018, 143: 172-184.
- 7) Pii Y, Zamboni A, Santo SD, Pezzotti M, Varanini Z, Pandolfini T. Prospect on ionic signatures for the classification of grapevine berries according to their geographical origin. *Frontiers in Plant Science* 2017, 8: 640.
- 8) Santi C, Zamboni A, Varanini Z, Pandolfini T. Growth stimulatory effects and genome-wide transcriptional changes produced by protein hydrolysates in maize seedlings. *Frontiers in Plant Science* 2017, 8: 433.
- 9) Zanin L, Venuti S, Zamboni A, Varanini Z, Tomasi N, Pinton R. Transcriptional and physiological analyses of Fe deficiency response in maize reveal the presence of Strategy I components and Fe/P interactions. *BMC Genomics* 2017, 18: 154.
- 10) Pii Y, Alessandrini M, Dall'Osto L, Guardini K, Prinsi B, Espen L, Zamboni A, Varanini Z. Time-resolved investigation of molecular components involved in the induction of NO₃-high affinity transport system in maize roots. *Frontiers in Plant Science* 2016, 7: 1657.
- 11) Zanin L, Venuti S, Tomasi N, Zamboni A, Francisco RMB, Varanini Z, Pinton R. Short-term treatment with the urease inhibitor N-(n-butyl) thiophosphoric triamide (NBPT) alters urea assimilation and modulates transcriptional profiles of genes involved in primary and secondary metabolism in maize seedlings. *Frontiers in Plant Science* 2016, 7: 845.
- 12) Zamboni A, Zanin L, Tomasi N, Avesani L, Pinton R, Varanini Z, Cesco S. Early transcriptomic response to Fe supply in Fe-deficient tomato plants is strongly influenced by the nature of the chelating agent. *BMC Genomics* 2016, 17: 35.
- 13) Zanin L, Tomasi N, Zamboni A, Varanini Z, Pinton R. The Urease Inhibitor NBPT Negatively Affects DUR3-mediated Uptake and Assimilation of Urea in Maize Roots. *Frontiers in Plant* 2015, 6: 1007.
- 14) Zanin L, Zamboni A, Monte R, Tomasi N, Varanini Z, Cesco S, Pinton R. Transcriptomic analysis highlights reciprocal interactions of urea and nitrate for nitrogen acquisition by maize roots. *Plant and Cell Physiology* 2015, 56: 532-548.
- 15) Pii Y, Alessandrini A, Guardini K, Zamboni A, Varanini Z. Induction of high-affinity NO₃-uptake in grapevine roots is an active process correlated to the expression of specific members of the NRT2 and plasma membrane H⁺-ATPase gene families. *Functional Plant Biology* 2014, 41: 353-365.
- 16) Cavallini E, Zenoni S, Finezzo L, Guzzo F, Zamboni A, Avesani L, Tornielli GB. Functional diversification of grapevine MYB5a and MYB5b in the control of flavonoid biosynthesis in a petunia anthocyanin regulatory mutant. *Plant and Cell Physiology* 2014, 55(3): 517-534.

- 17) Zamboni A, Astolfi S, Zuchi S, Pii Y, Guardini K, Tononi P, Varanini Z. Nitrate induction triggers different transcriptional changes in a high and a low nitrogen use efficiency maize inbred line. *Journal of Integrative Plant Biology* 2014, 56: 1080-1094.
- 18) Fasoli M, Dal Santo S, Zenoni S, Tornielli GB, Farina L, Zamboni A, Porceddu A, Venturini L, Bicego M, Murino V, Ferrarini A, Delledonne M, Pezzotti M. The Grapevine Expression Atlas Reveals a Deep Transcriptome Shift Driving the Entire Plant into a Maturation Program. *The Plant Cell* 2012, 24: 3489-3505.
- 19) Nikolic M, Cesco S, Monte R, Tomasi N, Gottardi S, Zamboni A, Pinton R, Varanini Z. Nitrate transport in cucumber leaves is an inducible process involving an increase in plasma membrane H⁺-ATPase activity and abundance. *BMC Plant Biology* 2012, 12: 66.
- 20) Zamboni A, Zanin L, Tomasi N, Pezzotti M, Pinton R, Varanini Z, Cesco S. Genome-wide microarray analysis of tomato roots showed defined responses to iron deficiency. *BMC Genomics* 2012, 13: 101.
- 21) Milli A, Cecconi D, Bortesi L, Persi A, Rinalducci S, Zamboni A, Zoccatelli G, Lovato A, Zolla L, Polverari A. Proteomic analysis of the compatible interaction between *Vitis vinifera* and *Plasmopara viticola*. *Journal of Proteomics* 2012, 75: 1284-1302
- 22) Toffali K, Zamboni A, Anesi A, Stocchero M, Pezzotti M, Levi M, Guzzo F. Novel aspects of grape berry ripening and post-harvest withering revealed by untargeted LC-ESI-MS metabolomics analysis. *Metabolomics* 2011, 7: 424-436.
- 23) Di Carli M, Zamboni A, Pè ME, Pezzotti M, Lilley KS, Benvenuto E, Desiderio A. Two-dimensional differential in gel electrophoresis (2D-DIGE) analysis of grape berry proteome during postharvest withering. *Journal of Proteome Research* 2011, 10: 429-446.
- 24) Zamboni A, Di Carli M, Guzzo F, Stocchero M, Zenoni S, Ferrarini A, Tononi P, Toffali K, Desiderio A, Lilley KS, Pè ME, Benvenuto E, Delledonne M, Pezzotti M. Identification of putative stage-specific grapevine berry biomarkers and omics data integration into networks. *Plant Physiology* 2010, 154: 1439-1459.
- 25) Polesani M, Bortesi L, Ferrarini A, Zamboni A, Fasoli M, Zadra C, Lovato A, Pezzotti M, Delledonne M, Polverari A. General and species-specific transcriptional responses to downy mildew infection in a susceptible (*Vitis vinifera*) and a resistant (*V. riparia*) grapevine species. *BMC Genomics* 2010, 11: 117.
- 26) Zamboni A, Gatto P, Cestaro A, Pilati S, Viola R, Mattivi F, Moser C, Velasco R. Grapevine cell early activation of specific response to DIMEB, a resveratrol elicitor. *BMC Genomics* 2009, 10: 1471.
- 27) Zamboni A, Minoia L, Ferrarini A, Tornielli GB, Zago E, Delledonne M, Pezzotti M. Molecular analysis of post-harvest withering in grape by AFLP transcriptional profiling. *Journal of Experimental Botany* 2008, 59: 4145-4159.
- 28) Polesani M, Desario F, Ferrarini A, Zamboni A, Pezzotti M, Kortekamp A, Polverari A. cDNA-AFLP analysis of plant and pathogen genes expressed in grapevine infected with *Plasmopara viticola*. *BMC Genomics* 2008, 9: 142.
- 29) Zamboni A, Vrhovsek U, Kassemeyer H-H, Mattivi F, Velasco R. Elicitor-induced resveratrol production in cell cultures of different grape genotypes (*Vitis* spp.). *Vitis* 2006, 45: 63-68.
- 30) Zenoni S, Reale L, Tornielli GB, Lanfaloni L, Porceddu A, Ferrarini A, Moretti C, Zamboni A, Speghini A, Ferranti F, Pezzotti M. Downregulation of the *Petunia hybrida* alpha-expansin gene PhEXP1 reduces the amount of crystalline cellulose in cell walls and leads to phenotypic changes in petal limbs. *The Plant Cell* 2004, 16: 295-308.

Zenoni S., Zamboni A., Dal Santo S., Fasoli M., Pezzotti M, Giovanni Battista Tornielli. Lo sviluppo delle conoscenze genomiche in vite e il loro potenziale utilizzo nella viticoltura attuale e futura. Review n. 17, Italus Hortus (in press).

Book chapter

Zenoni S., Zamboni A., Porceddu A., Pezzotti M. (2009) The role of expansins A in petunia development. PETUNIA, Evolutionary, Developmental and Physiological Genetics, 2009, Tom Gerats & Judith Strommer Editors, Springer, pp. 249-268. ISBN: 978-0-387-84795-5.

Tomasi N., Monte R., Rizzardo C., Venuti S., Zamboni A., Cesco S., Pinton R., Varanini Z. (2009). Effects of water-extractable humic substances on molecular physiology of nitrate uptake in two maize inbred lines with different nitrogen use efficiency. UC Davis: Department of Plant Sciences, UC Davis. <http://escholarship.org/uc/item/3qn459bc>.

Tornielli G.B., Zamboni A., Zenoni S., Delledonne M., Pezzotti M. Transcriptomics and metabolomics for the analysis of grape berry development. The Biochemistry of the Grape Berry, 2011, Hernâni Gerós, Manuela Chaves & Serge Delrot Editors, pp. 218-240.

Patent

"Processo, e relativo impianto, per l'ottenimento di nanoparticelle di fosfati contenenti nutrienti minerali essenziali per la nutrizione delle piante" (submitted 06/02/2018). Ciuffreda Giuseppe, Sega Davide, Varanini Zeno, Zamboni Anita, Speghini Adolfo.

4. Other information related to the research activity

Research visits

Project: Programma di Internazionalizzazione di Ateneo- Anno 2015 (Cooperint) in collaboration with Prof. Søren Husted, Department of Plant and Environmental Sciences, University of Copenhagen, 24-08-2015 - 18-09-2015.

February-March 2003: acquisition of methods regarding the production of solid and liquid grapevine cell cultures in collaboration with Dr. Dr. Hanns-Heinz Kassemeyer (Phytopathologie Pflanzenschutz/Plant Pathology & Plant Protection; Staatliches Weinbauinstitut, Freiburg, Germany)

International/National congress participation

- XXXVI Convegno Nazionale SICA, Reggio Calabria, 24-09-2018 - 26-09-2018.
- XV FISV Congress, Sapienza University of Roma, 18-09-2018 - 21-09-2018.
- The 3rd World Congress on the use of Biostimulants in Agriculture. Miami, 27-11-2017 - 30-11-2017.
- XXXV Convegno Nazionale SICA, Udine, 11-09-2017 - 13-09-2017.
- XXXIV Convegno Nazionale SICA, Perugia, 05-10-2016 - 07-10-2016.
- X International Symposium On Grapevine Physiology and Biotechnology, Verona, 13-06-2016 - 18-06-2016.
- 58th Italian Society of Agricultural Genetics Annual Congress, Alghero, 15-09-2014 - 18-09-2014.
- XXXII CONVEGNO NAZIONALE Società Italiana di Chimica Agraria, Bolzano, 07-09-2014 - 09-09-2014.

- Annual Meeting of the European Society for New Methods in Agricultural Research, Bolzano, 03-09-2014 - 06-09-2013.
- XXXI CONVEGNO NAZIONALE Società Italiana di Chimica Agraria, Napoli, 16-09-2013 - 17-09-2013.
- XVII INTERNATIONAL PLANT NUTRITION COLLOQUIUM, Istanbul, 19-08-2013 – 22-08-2013.
- XXX CONVEGNO NAZIONALE Società Italiana di Chimica Agraria, Milano, 18-09-2012 - 19-09-2012.
- IAPN, International Symposium on Magnesium in crop production, food quality and human health, Goettingen, 08-05-2012 - 09-05-2012.
- XXIX CONVEGNO NAZIONALE Società Italiana di Chimica Agraria SICA, Foggia, 21-09-2011 - 23-09-2011.
- XXVIII CONVEGNO NAZIONALE Società Italiana di Chimica Agraria SICA, Piacenza, 20-09-2010 - 21-09-2010.
- Cost 858 Viticulture Final Meeting, Bordeaux, 27-10-2009 - 30-10-2009.
- XXVII CONVEGNO NAZIONALE Società Italiana di Chimica Agraria SICA, Matera, 15-09-2009 - 18-09-2009.
- International Plant Nutrition Colloquium XVI, Sacramento, CA, 26-08-2009 - 30-08-2009.
- Summer School, Mineral Nutrition in photosynthetic organisms: molecular, physiological and ecological aspects, Maratea, 17-07-2009 - 20-07-2009.
- XXVI CONVEGNO NAZIONALE Società Italiana di Chimica Agraria SICA, Palermo, 30-09-2008 - 03-10-2008.
- Plant Genomics European Meetings, Venice, 11-10-2006 -14-10-2006.
- 9th International Conference on Grape Genetics and Breeding, Udine, 02-07-2006 - 07-07-2006.

Referee for international peer-reviewed journals

- Acta Physiologiae Plantarum
- American Journal of Enology and Viticulture
- Archives of Agronomy and Soil Science
- BMC Genomics
- BMC Plant Biology
- BMC Research Notes
- Ciência Rural
- Frontiers in Plant Science
- Horticulture Research
- Journal of Plant Interactions
- Journal of Plant Physiology
- Plant and Soil
- Plant Cell Reports
- Plant Molecular Biology Reporter
- Plant Science
- Tree Genetics and Genome

5. Teaching activities

(2013-2018): Lecturer in “Agricultural Biochemistry” (5 CFU), Undergraduate degree course in Viticultural and Oenological Science and Technology, University of Verona.

6. Prizes

10/05/2011 Florence: Premio antico fattore 2011, Accademia dei Georgofili, to Mario Pezzotti (with Anita Zamboni, Mariasole Di Carli, Flavia Guzzo, Matteo Stocchero, Sara Zenoni, Alberto Ferrarini, Paola Tononi, Ketti Toffali, Angiola Desiderio, Kathryn Lilley, Enrico Pè, Eugenio

Benvenuto e Massimo Delledonne) for the work: "Identification of putative stage-specific grapevine berry biomarkers and omics data integration into networks" (Plant Physiol. 2010 154(3): 1439-1459)

20/09/2011 Assisi: "Gian Tommaso Scarascia Mugnozza" Award for Agricultural Genetics to Anita Zamboni and Di Carli Mariasole for the work: Zamboni A., Di Carli M., Guzzo F., Stocchero M., Zenoni S., Ferrarini A., Tononi P., Toffali K., Desiderio A., Lilley K.S., Pè M.E., Benvenuto E., Delledonne M., Pezzotti M. Identification of putative stage - specific grapevine berry biomarkers and omics data integration into networks. Plant Physiol. 2010, 154: 1439-1459.

7. Courses

02/07/2012-06/07/2012: "Computational Statistics for Genome Biology (CSAMA)". Brixen, Italy.

26/01/2015-30/01/2015: "The School of Plant Metallomics". University of Copenhagen, Denmark.

Verona, 09/10/2019