

# Antonio Pompeiano

*Curriculum Vitae*

## Personalia

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## Objective

The scientific interests of AP deal with plant sciences and computational biology. In particular, AP is interested on the impacts of global changes on plant physiology. Moreover, with over 10 years of experience collaborating with leading academic, biotech, pharma and industry partners, AP is a data scientist and statistician specialized in high-dimensional data, integration methods on multiple 'omics data sets, and data-mining applied in plant physiology and translational medicine, who enjoy writing about multivariate data analysis, machine learning, and visualization in R language & environment.

## Education

**Ph.D.** in Crop Production Science, [University of Pisa](#) and [Sant'Anna School of Advanced Studies](#), Italy. Graduation: October 2009.  
Dissertation: “*Zoysia* spp.: Adaptability and possible use in the Mediterranean environment”.  
Major professor: Dr. Sergio Miele.

**M.S.** in Agricultural Science, [University of Pisa](#), Italy. Graduation: February 2003.  
Thesis: “Agronomic evaluation of an experimental product to induce germination of hemp broomrape (*Orobancha ramosa* L.) in tobacco crops (*Nicotiana tabacum* L.)”.  
Major professor: Dr. Sergio Miele.

## Research Experience

### University of Pisa

April 2023 – present

- Fixed-term assistant professor at the Department of Agriculture, Food and Environment.
- Research focus: physiology, ecological demands and management of perennial energy crops, carbohydrate metabolism of rice under anoxia, and adaptation of zoysiagrass cultivars (*Zoysia* spp.) to abiotic stress (e.g. freeze and heat). Data mining, predictive modeling and network analysis.
- Co-docent in the Plant Physiology and Proteomics (9 CFU) and Plant Biofactories (9 CFU) courses held at the University of Pisa.
- Mentor of undergraduate and graduate students in independent research.

**Mendel University in Brno (MENDELU)**

February 2020 – March 2023

- Researcher at the Department of Forest Botany, Dendrology and Geobiocoenology, Faculty of Forestry and Wood Technology (FFWT MENDELU).
- Research focus: Cross-adaptation mechanism between different abiotic stresses in forest ecosystems. Diel metabolite and transcripts profiles under abiotic perturbations in the genetic model system *Arabidopsis thaliana*.

**International Clinical Research Center (FNUSA-ICRC)**

May 2017 – March 2023

- Senior Postdoctoral Researcher at the Biostatistics Research Unit, International Clinical Research Center, St. Anne's University Hospital (FNUSA-ICRC).
- Research focus: bioinformatics analyses of proteomics and genomics data in biomedical research from different sources as animal/human cells and tissues. Integration and simultaneous variable selection on multiple 'omics data sets. Batch correction and treatment of missing values. Machine learning approaches for class discovery and pattern recognition (e.g. supervised/unsupervised clustering, random forest, neural networks). Gene ontology, enrichment analysis, and pathway analysis for the visualization and biological interpretation of 'omics data at the system. Estimation and testing in survival models.

**Translational Genomics Research Institute (TGen)**

April 2019 – August 2019

- Visiting scientist at the Collaborative Center for Translational Mass Spectrometry.
- Research focus: Bioinformatics pipeline for data integration across proteomics, metabolomics, genomics and transcriptomics to provide a united and actionable overview of neurodegenerative disease biology in precision medicine clinical trials.

**Global Change Research Institute – Czech Academy of Sciences**

February 2016 – April 2017

- Scientist at the Laboratory of Ecological Plant Physiology, domain of Environmental Effects on Terrestrial Ecosystems.
- Research focus: exploration and integration of large omics data sets, and pathway enrichment analysis from targeted and untargeted high-throughput metabolomics data. Cross-adaptation mechanism between different abiotic stresses in forest ecosystems.

**Federal University of Alagoas**

January 2014 – May 2015

- CNPq (Brazilian National Council for Scientific and Technological Development – Ministry of Science and Technology) Postdoctoral fellow at the Center of Agricultural Sciences, Laboratory of Plant Physiology.
- Research focus: multivariate analyses on targeted metabolomics data. High-dimensional data analysis and visualization. Implementation of machine learning solutions.

**University of Pisa**

December 2011 – December 2013

- Research assistant at the Department of Plant Physiology.
- Research focus: physiology, ecological demands and management of perennial energy crops, carbohydrate metabolism of rice under anoxia, and adaptation of zoysiagrass cultivars (*Zoysia* spp.) to abiotic stress (e.g. freeze and heat). Data mining, predictive modeling and network analysis.
- Assistant in the Plant Molecular Physiology (82 hours) and Plant Physiology and Proteomics

(82 hours) courses held at the University of Pisa.

- Mentor of undergraduate and graduate students in independent research.
- Scientific trial setup, management, survey and statistical analysis of field results. Co-tutor of scientific trials carried out by the University for private companies.

### **University of Arkansas**

June 2008 – May 2009

- Visiting scholar at the Department of Horticulture, Turfgrass Management and Physiology.
- Research focus: Influence of pH and nitrogen source on zoysiagrass growth.
- Data collection, plot installation and maintenance for various field research projects, including NTEP bermudagrass trial, NTEP seashore paspalum trial, Arkansas zoysiagrass trial, zoysiagrass performance in Arkansas as influenced by nitrogen rate, mowing height and cultivar, divot resistance varies among bermudagrass and zoysiagrass cultivars, shade and traffic tolerance varies for bermudagrass and zoysiagrass cultivars, sulfonylurea herbicide safety on sprigged bermudagrass and seashore paspalum, seed cover technology on the germination and establishment of warm-season grasses.
- Literature review and project development.

### **Professional Experience**

#### **Gruppo M&G – Chemtex Italia S.p.A.**

December 2010 – November 2011

- Research consultant for large-scale energy crops management, with the development and assessment of sustainable strategies – specific for *Arundo donax* L. – for the 40 kTa 2<sup>nd</sup> generation bio-ethanol plant.
- Research focus: development of dynamic crop growth models for yield and chemical/physical quality of feedstock under different fertilization and irrigation treatments.

#### **Limonta Sport Italia S.p.A.**

July 2009 – December 2009

- Agronomic consultant for the first soccer pitch with the ‘Football Green Live’ hybrid system installed at the olympic stadium in Serravalle (Republic of San Marino).

### **Fellowships and Honors**

- June 2022 achieved the National Scientific qualification as associate in the Italian higher education system, in the call 2021/2023 (Ministerial Decree n. 553/2021 and 589/2021) for the disciplinary field of 05/A2 - Plant physiology.
- September 2016 The Toulouse GenoToul Biostat platform, the Laboratory of Plant-Microbe Interactions and the Plant Science Research Laboratory: Summer School grant within the EU COST Action “The quest for tolerant varieties: phenotyping at plant and cellular level (FA1306).
- January 2014 – May 2015 CNPq postdoctoral fellow Science without Borders Program.
- November 2007 – October 2008 University of Pisa, Department of Agronomy and Agroecosystem Management, Research fellow. Focus: Evaluation of a natural zeolite additive, clinoptilolite, to increase the efficiency of nitrogen fertilizers in sand-based media.
- July 2003 – January 2006 University of Pisa, Department of Agronomy and Agroecosystem Management, Research fellow. Focus: Evaluation of different slow nitrogen releasing organic mineral granular fertilizers.

- July 2005 Spanish Ministry of Education (Ministerio de Educación): Fellowship “Programa de Recuperación y Utilización Educativa de Pueblos Abandonados”.

## Grants

### Czech Science Foundation (GAČR)

2021 – 2023

- Co-investigator, project entitled “Adaptation, avoidance, or extinction: linking community ecology and ecophysiology to understand the moisture deficit effects in temperate forests” (Registration number No. 21-11487S). The role of the applicant in this national project is to actively participate on the annual meetings presenting the project results, planning and performing experiments in the field of analytical chemistry (e.g. compounds identification and characterisation by mass spectrometry), performing the bioinformatics and biostatistical analyses, supervising the Ph.D. and M.Sc. students involved in the projects, writing the proposals, research protocols, reports, and publications. Budget 500 000 Euro.

### International Atomic Energy Agency (IAEA)

2018 – 2023

- Main co-investigator, Coordinated Research Project (CRP) entitled “Cuticular hydrocarbons: towards new chemotaxonomic and chemo-ecological tools to manage *Zenogodacus* and *Bactrocera* pests?” (IAEA Research Contract No. 23126/R0). The role of the applicant in this international project is to actively participate on the annual meetings presenting the project results, planning and performing experiments in the field of analytical chemistry (e.g. compounds identification and characterisation by mass spectrometry), supervising the Ph.D. and M.Sc. students involved in the projects, communication and establishment of collaboration network with the participating scientists from different countries, writing the proposals, research protocols, reports, publications and patents. Budget 400 000 Euro.

### Ministry of Health of the Czech Republic (AZV)

2018 – 2021

- Main co-investigator, project entitled “Central role of monocyte metabolic signature and transcription factors activity in sepsis progression” (NV18-06-00529). AZV project is focused on the central role of monocyte metabolic signature and transcription factors activity in sepsis progression. Supervision and guidance of small research team (counting three members), planning of experiments design, performance of chemical analyses using GCxGC-TOFMS instrument and headspace technique, data evaluation, management of the project budget, presentation of the project at national and international conferences, establishment of new collaboration partners within the CEITEC VUT, collaboration with other team members of the project, guidance of PhD students during the experimental work, transfer of mass spec knowledge to students. 2 research papers, budget 136 000 Euro.

### Brazilian National Council for Scientific & Technological Development (CNPq) 2014 – 2015

- Main co-investigator, project entitled “Selection of sugarcane genotypes for the production of biomass in a dry environment” (400714/2013-2). CNPq project was focused on the selection of sugarcane genotypes for tolerance to drought stress dedicated to 2<sup>nd</sup> generation bio-ethanol production. The role of the applicant in this international projects was to actively planning and performing experiments in open field and controlled environment, supervising the M.Sc. students involved in the projects, communication and establishment of collaboration network with GranBio, a brazilian biotechnology company that constructed a commercial-scale cellulosic ethanol production plant in Alagoas, Brazil. Budget R\$ 266 400.

## Patent Co-Author

Bargiacchi, E., R. Bertola, G. Costa, R. Della Croce, S. Miele, **A. Pompeiano**, and P. Zambelli. 2008. Method for Making Highly Efficient, Low-Pollution, Slowly Nitrogen Releasing Organic Mineral Granular Fertilizers. EPO No. 06756296.7-1218 PCT/I.  
<http://patentscope.wipo.int/search/en/WO2007043075>

## Post-doctoral courses

- 2020 December 03–04. SAS(R) Programming 2: Data Manipulation Techniques. Praha, CZ.
- 2019 December 09–10. European Bioconductor Meeting. Université catholique de Louvain, BE.
- 2018 December 06–07. European Bioconductor Meeting. Technical University of Munich, DE.
- 2018 October 15–16. Statistical Machine Learning with R. University of Leuven, BE.
- 2018 June 07–08. Advanced Workshop on omics data integration. Institut de Sciences des Plantes – Paris-Saclay.
- 2017 July 04–07. UseR! conference. Universities of Leuven and Hasselt, Brussels, BE.
- Dr. Martyn Plummer: Introduction to Bayesian Inference with JAGS.
  - Drs. Toby Dylan Hocking and Rebecca Killick: Introduction to optimal changepoint detection algorithms.
- 2016 September 12–14. Summer School on Multivariate data analysis methods for biological data using the R package *mixOmics*. The Toulouse GenoToul Biostat platform, the Laboratory of Plant-Microbe Interactions and the Plant Science Research Laboratory.
- 2015 June 30 – July 03. UseR! conference. University of Aalborg, DK.
- Prof. François Husson: Handling missing values with a special focus on the use of principal components methods.
  - Dr. Martin Morgan: Bioconductor for high-throughput sequence analysis.
- 2013 July 09–12. UseR! conference. University of Castilla-La Mancha, Albacete, ES.
- Prof. Håvard Rue: Bayesian computing with *INLA*: An introduction.
  - Prof. Roger S Bivand: Using spatial data.
- 2012 October 18–19. Advanced R programming topics. University of Leuven, BE.
- 2011 August 15–18. UseR! conference. University of Warwick, Coventry, UK.
- Prof. Douglas Bates: Fitting and evaluating mixed models using *lme4*.
  - Prof. Frank E Harrell Jr: Regression modeling strategies using the R package *rms*.

## Professional courses

2004 July 5–30. Sant'Anna School for Advanced Studies – Advanced professional training: Sustainable agriculture.

## Current Research

More recently, AP's work has been focused on computational biology. In particular, the major research interest is on the mathematical statistics characterization of molecular biological systems with variable selection for biological data ('omics' data) coming from different functional levels by the means of multivariate dimension reduction approaches. Also, AP's work has been focusing on physiology of *Arundo donax* L., from the responses to endogenous stimuli to adaptation to abiotic stress. In particular, researches have been conducted on Adx tolerance to anoxia/hypoxia, drought, freeze and salinity stress. Also, a work has been performed on the seedling establishment of tall fescue exposed to long-term starvation stress. Ongoing statistical collaborations are provided to the Department of Plant and Environmental Sciences, University of Copenhagen, Denmark, the Royal

Museum for Central Africa, Tervuren, Belgium, the Department of Crop Science and Production, University of Agriculture, Sokoine, Tanzania, the Institute of Organic Chemistry and Biochemistry of the ASCR, Prague, Czech Republic, CEITEC – Central European Institute of Technology, Brno, Czech Republic, CzechGlobe - Global Change Research Institute of the Czech Academy of Sciences (GCRI), Brno, Czech Republic, the Department of Plant Soil and Environmental Science, University of Florence, Italy, the Department of Agriculture, Food and Environment, University of Pisa, Italy, TGen – Translational Genomics Research Institute, Phoenix, AZ, the Department of Neurobiology, Barrow Neurological Institute, Phoenix, AZ, and the Institute of Integrative Biology, Department of Environmental Systems Science, ETH Zürich, Switzerland.

## Scientific Publications

### International Journals

**Pompeiano, A.**, T. M. Moles, V. Viscomi, A. Scartazza, T. Huaranca Reyes, and L. Guglielminetti. 2024. Behind the loss of salinity resistance during domestication: alternative eco-physiological strategies are revealed in tomato clade. [Horticulturae](#). 10(6), 644. DOI: 10.3390/horticulturae10060644

Jacob, V., G. Ramiaranjatovo, E. Persyn, A. Machara, P. Kyjaková, T. Atiama-Nurbel, **A. Pompeiano**, G. Benelli, M. De Meyer, and L. Vaníčková. 2023. Female melon fruit flies, *Zeugodacus cucurbitae*, are attracted to a synthetic chemical blend based on male epicuticular components. [Journal of Pest Science](#). DOI: 10.1007/s10340-023-01707-4.

Vu, L., K. Garcia-Mansfield, **A. Pompeiano**, J. An, V. David-Dirgo, R. Sharma, V. Venugopal, H. Halait, G. Marcucci, Y.-H. Kuo, L. Uechi, R.C. Rockne, P. Pirrotte, and R. Bowser. 2023. Proteomics and mathematical modeling of longitudinal CSF differentiates fast versus slow ALS progression. [Annals of Clinical and Translational Neurology](#). 10 (11): 2025–2042. DOI: 10.1002/acn3.51890.

Vaníčková, L., T. Do, M. Vejvodová, V. Horák, M. Hubálek, G. Emri, K. Zemánková, K. Pavelicová, S. Křížková, V. Faltusová, **A. Pompeiano**, M. Vaculovičová, O. Zítka, T. Vaculovič, and V. Adam. 2022. Mapping of MeLiM melanoma combining ICP-MS and MALDI-MSI methods. [International Journal of Biological Macromolecules](#). 203 (1): 583–592. DOI: 10.1016/j.ijbiomac.2022.01.139.

Zemánková, K., K. Pavelicová, **A. Pompeiano**, L. Mravcová, M. Černý, K. Bendíčková, M. Hortová Kohoutková, K. Dryahina, M. Vaculovičová, J. Frič, and L. Vaníčková. 2021. Targeted volatolomics of human monocytes: Comparison of 2D-GC/TOF-MS and 1D-GC/Orbitrap-MS methods. [Journal of Chromatography B](#). 1184: 122975. DOI: 10.1016/j.jchromb.2021.122975.

Vrbsky, J., V. Vinarsky, A. R. Perestrello, J. O. De La Cruz, F. Martino, **A. Pompeiano**, V. Izzì, O. Hlinomaz, V. Rotrekl, M. Sudol, S. Pagliari, and G. Forte. 2021. Evidence for discrete modes of *YAP1* signaling via mRNA splice isoforms in development and disease. [Genomics](#). 113 (3): 1349–1365. DOI: 10.1016/j.ygeno.2021.03.009.

Pagliari, S., V. Vinarsky, F. Martino, A. R. Perestrello, J. O. De La Cruz, G. Caluori, J. Vrbsky, P. Mozetic, **A. Pompeiano**, A. Zancla, S. G. Ranjani, P. Skladal, D. Kytýr, Z. Zdráhal, G. Grassi, M. Sampaolesi, A. Rainer, and G. Forte. 2020. YAP–TEAD1 control of cytoskeleton dynamics and intracellular tension guides human pluripotent stem cell mesoderm specification. [Cell Death & Differentiation](#). 28: 1193–1207. DOI: 10.1038/s41418-020-00643-5.

- Huaranca Reyes, T., **A. Pompeiano**, A. Ranieri, M. Volterrani, L. Guglielminetti, and A. Scartazza. 2020. Photosynthetic performance of five cool-season turfgrasses under UV-B exposure. [Plant Physiology and Biochemistry](#). 151: 181–187. DOI: 10.1016/j.plaphy.2020.03.025.
- Bendičková, K., F. Tidu, M. De Zuani, M. Hortová Kohoutková, **A. Pompeiano**, S. Beláškova, T. Zelante, and J. Frič. 2020. Calcineurin inhibitors reduce NFAT-dependent expression of antifungal pentraxin-3 by human monocytes. [Journal of Leukocyte Biology](#). 107 (3): 497–508. DOI: 10.1002/JLB.4VMA0318-138R.
- Vaníčková, L., **A. Pompeiano**, P. Madera, T. J. Massad, and P. Vahalík. 2020. Terpenoid profiles of resin in the genus *Dracaena* are species specific. [Phytochemistry](#). 170: 112197. DOI: 10.1016/j.phytochem.2019.112197.
- Moles, T. M., R. de Brito Francisco, L. Mariotti, **A. Pompeiano**, A. Lupini, L. Incrocci, G. Carmassi, A. Scartazza, L. Pistelli, L. Guglielminetti, A. Pardossi, F. Sunseri, S. Hörtensteiner, and D. Santelia. 2019. Salinity in autumn-winter season and fruit quality of tomato landraces. [Frontiers in Plant Science](#). 10: 1078. DOI: 10.3389/fpls.2019.01078.
- Ananbeh, H., M. Stojanović, **A. Pompeiano**, S. Voberková, and C. Trasar-Cepeda. 2019. Use of soil enzyme activities to assess the recovery of soil functions in abandoned coppice forest systems. [Science of the Total Environment](#). 694: 133692. DOI: 10.1016/j.scitotenv.2019.133692.
- Večerová, K., Z. Večera, P. Mikuška, P. Coufalík, M. Oravec, B. Dočekal, K. Novotná, B. Veselá, **A. Pompeiano**, and O. Urban. 2019. Temperature alters susceptibility of *Picea abies* seedlings to airborne pollutants: the case of CdO nanoparticles. [Environmental Pollution](#). 253: 646–654. DOI: 10.1016/j.envpol.2019.07.061.
- Huaranca Reyes, T., A. Scartazza, **A. Pompeiano**, and L. Guglielminetti. 2019. Physiological responses of *Lepidium meyenii* plants to ultraviolet B radiation challenge. [BMC Plant Biology](#). 19: 186. DOI: 10.1186/s12870-019-1755-5.
- Pompeiano, A.**, T. Huaranca Reyes, T. M. Moles, L. Guglielminetti, and A. Scartazza. 2019. Photosynthetic and growth responses of *Arundo donax* L. plantlets under different oxygen deficiency stresses and re-oxygenation. [Frontiers in Plant Science](#). 10: 408. DOI: 10.3389/fpls.2019.00408.
- De La Cruz, J. O., G. Nardone, J. Vrbsky, **A. Pompeiano**, A. R. Perestrelo, F. Capradossi, K. Melajová, P. Filipensky, and G. Forte. 2019. Substrate mechanics controls adipogenesis through YAP phosphorylation by T dictating cell spreading. [Biomaterials](#). 205: 64–80. DOI: 10.1016/j.biomaterials.2019.03.009.
- Karimi, M., A. Ahmadi, J. Hashemi, A. Abbasi, S. Tavarini, **A. Pompeiano**, L. Guglielminetti, and L.G. Angelini. 2019. Plant growth retardants (PGRs) affect growth and secondary metabolite biosynthesis in *Stevia rebaudiana* Bertoni under drought stress. [South African Journal of Botany](#). 121: 394–401. DOI: 10.1016/j.sajb.2018.11.028.
- Huaranca Reyes, T., A. Scartazza, **A. Pompeiano**, A. Ciurli, Y. Lu, L. Guglielminetti, and J. Yamaguchi. 2018. Nitrate reductase modulation in response to changes in C/N balance and nitrogen source in *Arabidopsis*. [Plant and Cell Physiology](#). 59 (6): 1248–1254. DOI: 10.1093/pcp/pcy065.

- Magni, S., **A. Pompeiano**, M. Gaetani, L. Caturegli, N. Grossi, A. Minelli, and M. Volterrani. 2017. Zoysiagrass (*Zoysia* spp. Willd.) for European lawns: a review. [Italian Journal of Agronomy](#). 12 (4): 395–402. DOI: 10.4081/ija.2017.925.
- Vaničková, L., R. Nagy, **A. Pompeiano**, and B. Kalinová. 2017. Epicuticular chemistry reinforces the new taxonomic classification of the *Bactrocera dorsalis* species complex (Diptera: Tephritidae, Dacinae). [PLoS ONE](#). 12(9): e0184102. DOI: 10.1371/journal.pone.0184102.
- Pompeiano, A.**, T. Huaranca Reyes, T. M. Moles, M. Villani, M. Volterrani, L. Guglielminetti, and A. Scartazza. 2017. Inter- and intraspecific variability in physiological traits and post-anoxia recovery of photosynthetic efficiency in grasses under oxygen deprivation. [Physiologia Plantarum](#). 161 (3): 385–399. DOI: 10.1111/ppl.12608.
- Pompeiano, A.**, and A.J. Patton. 2017. Growth and root architecture responses of zoysiagrass to changes in fertilizer nitrate : urea ratio. [Journal of Plant Nutrition and Soil Science](#). 180 (5): 528–534. DOI: 10.1002/jpln.201600401.
- Pompeiano, A.**, D. Remorini, F. Vita, L. Guglielminetti, S. Miele, and S. Morini. 2017. Growth and physiological response of *Arundo donax* L. to controlled drought stress and recovery. [Plant Biosystems](#). 151 (5): 906–914. DOI: 10.1080/11263504.2016.1249427.
- Pompeiano, A.**, M. Landi, G. Meloni, F. Vita, L. Guglielminetti, and L. Guidi. 2017. Allocation pattern, ion partitioning, and chlorophyll *a* fluorescence in *Arundo donax* L. in responses to salinity stress. [Plant Biosystems](#). 151 (4): 613–622. DOI: 10.1080/11263504.2016.1187680.
- Pompeiano, A.**, C.R. Damiani, S. Stefanini, P. Vernieri, T. Huaranca Reyes, M. Volterrani, and L. Guglielminetti. 2016. Seedling establishment of tall fescue exposed to long-term starvation stress. [PLoS ONE](#). 11(11): e0166131. DOI: 10.1371/journal.pone.0166131.
- Moles, T. M., **A. Pompeiano**, T. Huaranca Reyes, A. Scartazza, and L. Guglielminetti. 2016. The efficient physiological strategy of a tomato landrace in response to short-term salinity stress. [Plant Physiology and Biochemistry](#). 109: 262–272. DOI: 10.1016/j.plaphy.2016.10.008.
- Vita, F., C. Taiti, **A. Pompeiano**, Z. Gu, E. Lo Presti, L. Whitney, M. Monti, G. Di Miceli, D. Giambalvo, P. Ruisi, L. Guglielminetti, and S. Mancuso. 2016. Aromatic and proteomic analyses corroborate the distinction between Mediterranean landraces and modern varieties of durum wheat. [Scientific Reports](#). 6: 34619. DOI: 10.1038/srep34619.
- Večerová, K., Z. Večera, B. Dočekal, M. Oravec, **A. Pompeiano**, J. Tríska, and O. Urban. 2016. Changes of primary and secondary metabolites in barley plants exposed to CdO nanoparticles. [Environmental Pollution](#). 218: 207–218. DOI: 10.1016/j.envpol.2016.05.013.
- Pompeiano, A.**, and L. Guglielminetti. 2016. Carbohydrate metabolism in germinating caryopses of *Oryza sativa* L. exposed to prolonged anoxia. [Journal of Plant Research](#). 129 (5): 833–840. DOI: 10.1007/s10265-016-0840-1.
- Pompeiano, A.**, E. Di Patrizio, M. Volterrani, A. Scartazza, and L. Guglielminetti. 2016. Growth responses and physiological traits of seashore paspalum subjected to short-term salinity stress and recovery. [Agricultural Water Management](#). 163: 57–65. DOI: 10.1016/j.agwat.2015.09.004.
- Karimi, M., A. Ahmadi, J. Hashemi, A. Abbasi, S. Tavarini, **A. Pompeiano**, L. Guglielminetti, and L.G. Angelini. 2016. The positive role of steviol glycosides in stevia (*Stevia rebaudiana* Bertoni)



- under drought stress condition. [Plant Biosystems](#). 150 (6): 1323–1331. DOI: 10.1080/11263504.2015.1056857.
- Vita, F., C. Taiti, **A. Pompeiano**, N. Bazihizina, V. Lucarotti, S. Mancuso, and A. Alpi. 2015. Volatile organic compounds in truffle (*Tuber magnatum* Pico): comparison of samples from different regions of Italy and from different seasons. [Scientific Reports](#). 5: 12629. DOI: 10.1038/srep12629.
- Vaničková, L., R. Brízová, **A. Pompeiano**, L. L. Ferreira, N. C. de Aquino, R. F. Tavares, L. D. Rodriguez, A. Lima Mendonça, N. A. Canal, and R. Rufino do Nascimento. 2015. Characterisation of the chemical profiles of Brazilian and Andean morphotypes belonging to the *Anastrepha fraterculus* complex (Diptera, Tephritidae). [ZooKeys](#). 540: 193–209. DOI: 10.3897/zookeys.540.9649.
- Vaničková, L., R. Brízová, **A. Pompeiano**, S. Ekesi, and M. De Meyer. 2015. Cuticular hydrocarbons corroborate the distinction between lowland and highland Natal fruit fly (Tephritidae, *Ceratitis rosa*) populations. [ZooKeys](#). 540: 507–524. DOI: 10.3897/zookeys.540.9619.
- Vaničková, L., R. Brízová, A. Lima Mendonça, **A. Pompeiano**, and R. Rufino do Nascimento. 2015. Intraspecific variation of cuticular hydrocarbon profiles in the *Anastrepha fraterculus* (Diptera: Tephritidae) species complex. [Journal of Applied Entomology](#). 139 (9): 679–689. DOI: 10.1111/jen.12204.
- Pompeiano, A.**, F. Vita, A. Alpi, and L. Guglieminetti. 2015. *Arundo donax* L. response to low oxygen stress. [Environmental and Experimental Botany](#). 111: 147–154. DOI: 10.1016/j.envexpbot.2014.11.003.
- Pompeiano, A.**, L. Caturegli, N. Grossi, M. Volterrani, and L. Guglieminetti. 2015. Carbohydrate metabolism during wintering period in four zoysiagrass genotypes. [Plant Production Science](#). 18 (1): 43–51. DOI: 10.1626/ppp.18.43.
- Pompeiano, A.**, F. Vita, S. Miele, and L. Guglieminetti. 2015. Freeze tolerance and physiological changes during cold acclimation of giant reed [*Arundo donax* (L.)]. [Grass and Forage Science](#). 70 (1): 168–175. DOI: 10.1111/gfs.12097.
- Karimi, M., J. Hashemi, A. Ahmadi, A. Abbasi, **A. Pompeiano**, S. Tavarini, L. Guglieminetti, and L.G. Angelini. 2015. Opposing effects of external gibberellin and Daminozide on Stevia growth and metabolites. [Applied Biochemistry and Biotechnology](#). 175 (2): 780–791. DOI: 10.1007/s12010-014-1310-7.
- Pompeiano, A.**, V. Giannini, M. Gaetani, F. Vita, L. Guglieminetti, E. Bonari, and M. Volterrani. 2014. Response of warm-season grasses to N fertilization and salinity. [Scientia Horticulturae](#). 177 (2): 92–98. DOI: 10.1016/j.scienta.2014.07.044.
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#### Papers under review

- Pompeiano, A.**, T. M. Moles, L. Mariotti, D. Di Baccio, A. Santaniello, A. Scartazza, T. Huaranca Reyes, and L. Guglielminetti. 2024. Tomato biodiversity reveals landrace enhanced drought-adaptive strategy.
- Tulková, J., **A. Pompeiano**, T.J. Massad, P. Váhalík, Z. Paschová, L. Vaníčková, and P. Maděra. 2024. Do *Boswellia elongata* volatiles depend on geographical location and seasonality? In situ study from Socotra Island.
- Panicucci, G., C. Sbrana, C. Chiellini, **A. Pompeiano**, C. Echeverría, L. Guglielminetti, and T. Huaranca Reyes. 2024. Short-term effects of different light intensities on Mediterranean and Andean isolated microalgae.

#### Presentations

- Pompeiano, A.** 2019. Multivariate data analysis of metabolomic data: data integration, feature selection and visualisation. Advances in NMR and MS Based Metabolomics. Italian Mass Spectrometry Society. 20-22 November 2019 Lucca, Italy.
- Pompeiano, A.** 2019. Photosynthetic and growth responses of *Arundo donax* L. plantlets under different oxygen deficiency stresses and reoxygenation. Plant Developmental and Production Biology under Global Climate Change. Mendel University in Brno. 9-11 September 2019 Brno, Czech Republic.

## Conference Proceedings and Abstracts

- Huaranca Reyes, T., **A. Pompeiano**, C. Sandoval, C. Echeverría, and L. Guglielminetti. 2024. UV-B effects on the physiology of native microalgae from highland, lowland, and indoor locations. SIBV Workshop on Plant Biology 2024. 21-23 February 2024 Bertinoro, Italy.
- Huaranca Reyes, T., **A. Pompeiano**, and L. Guglielminetti. 2023. The 'Focus' project for the One Health solution through the recycling of cigarette butts. Strengthening cross-sectors to integrate humans-animals-ecosystems: A One Health approach declined in agriculture science. International Workshop. University of Pisa. 22-23 November 2023 Pisa, Italy.
- Guglielminetti, L., T. Huaranca Reyes, **A. Pompeiano**, A. Scartazza, and J. Yamaguchi. 2023. Effect of the carbon/nitrogen ratio on the primary metabolism of plants. 1<sup>st</sup> Symposium on Plant Science of the University of Pisa. 19 May 2023 Pisa, Italy.
- Vaníčková, L., K. Pavelicová, K. Zemanková, **A. Pompeiano**, L. Mravcová, K. Bendíčková, M. Hortová Kohoutková, and J. Frič. 2019. Analysis of human monocyte volatiles by solid-phase microextraction combined with two-dimensional gas chromatography-mass spectrometry for biomarker discovery. MSACL 2019 EU. 6<sup>th</sup> European Congress & Exhibition. 24-26 September 2019 Salzburg, Austria.
- Pompeiano, A.**, T. Huaranca Reyes, T. M. Moles, L. Guglielminetti, and A. Scartazza. 2019. Photosynthetic and growth responses of *Arundo donax* L. plantlets under different oxygen deficiency stresses and reoxygenation. Plant Developmental and Production Biology under Global Climate Change. Mendel University in Brno. 9-11 September 2019 Brno, Czech Republic.
- Guglielminetti, L., T. Huaranca Reyes, A. Scartazza, **A. Pompeiano**, A. Ciurli, Y. Lu, and J. Yamaguchi. 2018. Nitrate reductase modulation in response to changes in C/N balance and nitrogen source in *Arabidopsis*. 36<sup>th</sup> Annual Meeting of the Japanese Society for Plant Cell and Molecular Biology. 26-28 August 2018 Kanazawa, Japan.
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- Huaranca Reyes, T., T. M. Moles, **A. Pompeiano**, A. Scartazza, and L. Guglielminetti. 2016. The efficient physiological strategy of an Italian tomato landrace in response to high salinity stress. 34<sup>th</sup> Annual Meeting of the Japanese Society of Plant Cell and Molecular Biology. 1-3 September 2016 Nagano, Japan.
- Huaranca Reyes, T., A. Scartazza, **A. Pompeiano**, and L. Guglielminetti. 2018. The capacity of *Lepidium meyenii* plants to recover from UV-B irradiation challenge. 2<sup>nd</sup> Network Meeting of UV4Plants, The International Association for Plant UV Research. 15-18 April 2018 Bled, Slovenia.

- Guglielminetti, L., T. Huaranca Reyes, A. Scartazza, **A. Pompeiano**, and M. Volterrani. 2018. Effects of UV-B radiation on five cool-season turfgrasses. 2<sup>nd</sup> Network Meeting of UV4Plants, The International Association for Plant UV Research. 15-18 April 2018 Bled, Slovenia.
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cold acclimation. The XII Italian Federation of Life Sciences (F.I.S.V.) congress. 24-27 September, 2012 Rome, Italy.

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## Editorial activity

AP is a review editor in Crop and Product Physiology, specialty section of Frontiers in Plant Science. AP is a Guest Editor of a special issue of Plants, section "Plant Physiology and Metabolism", entitled "Effect of Carbon/Nitrogen Balance on Photosynthetic Organisms: From Lab to Natural Environment". Also, AP regularly acts as manuscript reviewer for international scientific journals including Acta Agronómica, African Journal of Biotechnology, Archives of Agronomy and Soil Science, Bulletin of Entomological Research, Ecological Engineering, Ecotoxicology and Environmental Safety, Environmental and Experimental Botany, European Journal of Horticultural Science, Flora, Frontiers in Agronomy, Frontiers in Plant Science, Industrial Crops and Products, International Journal of Molecular Sciences, Irrigation Science, Journal of Plant Ecology, Journal of Visualized Experiments, Pedosphere, Phytochemistry, Plant Physiology and Biochemistry, Plants, Preparative Biochemistry & Biotechnology, Saudi Journal of Biological Sciences, Scientia Horticulturae, Scientific Reports, and Stresses.

## Technical Skills and Competences

Software Packages: R, RStudio, MZmine2, MaxQuant, STRING, SAS, GraphPad Prism, SigmaPlot, SigmaScan Pro, WinRHIZO, LaTeX, Pynomo, MS Office, EndNote, Adobe Creative Cloud.

R Packages: *adeqnet*, *agricolae*, *CePa*, *ChIPseeker*, *circRize*, *clusterProfiler*, *dendextend*, *DEP*, *DESeq2*, *DOSE*, *dplyr*, *edgeR*, *effects*, *factoextra*, *FactoMineR*, *gam*, *GEOquery*, *ggplot2*, *goProfiles*, *gplots*, *HTqPCR*, *hyperSpec*, *INLA*, *lattice*, *lme4*, *lmerTest*, *mgcv*, *missMDA*, *mixOmics*, *multcomp*, *muma*, *MUVR*, *nlme*, *pheatmap*, *randomForest*, *ReactomePA*, *rms*, *survminer*, *sva*, *vegan*, *WGCNA*.

Operating Systems: Mac OS X Monterey, Windows XP/10, Linux Ubuntu.

Laboratory Techniques: HPLC, Metabolites extraction and quantification, Enzymatic assay, Spectrophotometric analysis, Protein electrophoresis, Gas exchange (Li-Cor 6400 XT) and chlorophyll *a* fluorescence (Walz PAM-2500).

Extra Skills: Black and White photographer. Digital image acquisition.

## Spoken Languages

- **English** Excellent reading, writing, and verbal skills.
- **Spanish** Good reading, writing, and verbal skills.
- **Swedish** Basic reading, writing, and verbal skills.
- **Czech** Basic reading, writing, and verbal skills.
- **Italian** Native speaker.

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