

Fabiano Sillo

Researcher, Institute for Sustainable Plant Protection - CNR



fabiano.sillo@cnr.it | ORCID: [0000-0002-1218-9985](https://orcid.org/0000-0002-1218-9985)

PROFILE

Researcher at IPSP-CNR with expertise in plant-microorganism interactions, plant and fungal genomics and transcriptomics, molecular diagnostics, and bioinformatic analyses. Current research focuses on plant resilience to environmental stress, root-associated microbiomes, and the application of omics approaches in agroforestry systems.

AREAS OF EXPERTISE

- Plant-fungus and plant-microbiome interactions
- Genomics, transcriptomics and NGS data analysis using bioinformatic approaches
- Molecular diagnostics
- Population genetics and biostatistical analysis
- Greenhouse experiments, field sampling and microbiology

CURRENT POSITIONS AND PROFESSIONAL EXPERIENCE

- Sep 2024 – present** **Adjunct Professor - Mycology**
University of Eastern Piedmont, Department of Science and Technological Innovation, Vercelli, Italy
 Teaching of Mycology in the BSc programme in Biological Sciences.
- Nov 2019 – present** **Researcher (Level III)**
Institute for Sustainable Plant Protection - National Research Council of Italy (IPSP-CNR), Turin Headquarters, Strada delle Cacce 73, 10135 Turin, Italy
 Research on plant-microorganism interactions and environmental stresses in crops and forest species. Activities include plant and symbiotic fungal genomics and transcriptomics, molecular diagnostics, population genetics, and bioinformatic analysis of omics data.
- Sep – Nov 2019** **Technical-Practical Teacher (substitute appointment)**
Agricultural Technical Institute "G. Dalmasso", Pianezza (TO), Italy
 Laboratory teaching in agronomy, inorganic chemistry and animal science.
- Apr 2013 – Aug 2019** **Research Fellow**
University of Turin, Department of Agricultural, Forest and Food Sciences - Forest Pathology Unit
 Research on forest pathogen diagnostics, epidemiology of wood-decay fungi and invasive pathogens, hybridisation and introgression in fungal species.
- May – Aug 2012** **Research Collaborator**
University of Turin, DBIOS - ARAS project
 Fungal genome mining and analysis of cell wall-related genes.
- Jan – Apr 2012** **Research Collaborator**
CNR - Institute for Plant Protection (IPP)
 Annotation of Tuber magnatum genes, laser microdissection, RNA extraction and gene expression analysis by RT-qPCR.
- Feb – Jul 2005** **Technical-Practical Teacher (substitute appointment)**
Agricultural Technical Institute "G. Dalmasso", Pianezza (TO), Italy
 Laboratory teaching in agronomy, plant pathology, fruit growing and animal science.

EDUCATION, MOBILITY AND QUALIFICATIONS

- 2009 – 2012** **PhD in Science and High Technology - Fungal Biology and Biotechnology (24th cycle)**
University of Turin, Department of Plant Biology (now DBIOS)
 Thesis: "Mining truffle genomes: from a wide genome analysis to cell-wall related proteins". Supervisor: Professor Paola Bonfante; co-supervisor: Dr Raffaella Balestrini.
- 2008** **MSc in Agricultural and Plant Biotechnology**
University of Turin - Faculty of Agriculture
 Thesis: "Updates in linkage analysis in *Cynara cardunculus*". Supervisor: Professor Ezio Portis.

2006 BSc in Biotechnology - Agricultural Curriculum
University of Turin - Faculty of Agriculture
 Thesis: "Mobile elements and plant genome evolution. Two case studies: *BARE-I* and *Helitron*".
 Supervisor: Professor Sergio Lanteri.

2002 Agricultural Technician Diploma
Agricultural Technical Institute "G. Dalmasso", Pianezza (TO), Italy

INTERNATIONAL EXPERIENCE

- 2022 - Visiting Research Scientist (short-term mobility, 1 month), **Helmholtz Zentrum München**, Germany.
- 2011 - Visiting PhD Student (1 month), **INRAE Champenoux-Nancy**, France.
- 2010 - Visiting PhD Student (5 months), **University of Amsterdam**, SILS, The Netherlands.

NATIONAL SCIENTIFIC QUALIFICATION, LANGUAGES AND TECHNICAL SKILLS

National Scientific Qualification. Qualified for the position of Associate Professor in Competition Sector 07/D1 - Plant Pathology and Entomology (ASN 2016-2018, second tier; valid from 30/07/2018 to 30/07/2029).

Languages. Italian (native); English (B2); French (A2).

Methods. Nucleic acid extraction; PCR, RT-PCR, qPCR and LAMP; molecular cloning; genotyping (AFLP, RAMS, SSR); NGS data analysis; fungal genomics and transcriptomics; sampling, isolation and identification of fungi and bacteria; microscopy and greenhouse bioassays.

RESEARCH PROJECTS AND AGREEMENTS

- 2026 – 2029 CNR Italian Unit Leader | SMARTED - Smart-AI Mediterranean Agro-ecology for Regenerative Truffle Ecosystems Development**
PRIMA Call 2025, Section 2 - Multi-topic; PI (University of Rabat): Dr Sarah Bouzroud.
- 2022 – 2027 Research Team Member | Root2Res - Root phenotyping and genetic improvement for rotational crops resilient to environmental change**
Horizon Europe project (Grant Agreement no. 101060124; 01/09/2022–31/08/2027). CNR Unit Leader: Raffaella Balestrini.
- 2023 – 2025 Principal Investigator | RENEW - REDiscovering NEglected Tunisian durum Wheat landraces towards a renewable agriculture**
CNR Italy-Tunisia bilateral project CNR-MHSE; co-PI: Dr Ines Zouari.
- 2021 – 2026 Principal Investigator | Mining ectomycorrhizal genomes and transcriptomes: from pan-genome to adaptive evolution in a climate change scenario**
DOE Joint Genome Institute (USA); co-PI: Professor Mirco Iotti.
- 2021 – 2023 Research Team Member | VertiGROW - Vertical Farming: development of a prototype to produce high value horticultural crops enriched by bioactive molecules**
CNR-funded; Project Coordinator: Raffaella Balestrini.
- 2021 – 2023 Research Team Member | Selection and evaluation of plant growth-promoting rhizobacteria to increase climate-resilient crop production**
International Joint Laboratory; CNR-funded; Project Coordinator: Mauro Centritto.
- 2021 – 2024 Research Team Member | RESCHEDULE - RESilient to Climate Change Extremes MeDiterranean AgricUltural Systems: LEveraging the Power of Soil Health and Associated Microbiota**
PRIMA Call 2020, Section 2 - Multi-topic; Project Coordinator: Raffaella Balestrini.
- 2021 – 2024 Research Team Member | OPTIMUS PRIME - OPTIMal USage of natural product and biological PRIMing agents to improve rEsilience of agrosystems to climate change**
PRIMA Call 2020, Section 2 - Multi-topic; Project Coordinator: Raffaella Balestrini.
- 2017 – 2022 Participant | DISAFA Agreement - SP Sourcon-Padena GmbH (Germany)**
*Assessment of the efficacy, active metabolites and environmental impact of *Pseudomonas* sp. DSMZ 13134 treatments against *Heterobasidion* sp.*
- 2015 – 2019 Participant | DISAFA Agreement - City of Turin**
Strategies for mitigating the risk of tree failure in urban avenues caused by wood-decay fungi.
- 2017 – 2018 MiAgr Collection Manager | Microorganisms as a tool for technological innovation: creation of the UNITO collections platform**
CRT Project, CRT Foundation.
- 2013 – 2016 Research Fellow | FIRB 2012 - Assessment of the effects of invasive fungal pathogens and phytophagous insects on plants, pathogens, phytophagous insects and native symbionts**
MIUR; Project Coordinator: Professor Paolo Gonthier.
- 2008 – 2010 Participant | FUNGENTm - A functional genomics platform for the black truffle *Tuber melanosporum***
PRIN 2007; Project Coordinator: Dr Raffaella Balestrini.

TEACHING, SUPERVISION AND SCIENTIFIC SERVICE

TEACHING AND INVITED TALKS

- Adjunct professor in Mycology, BSc programme in Biological Sciences, University of Eastern Piedmont (from academic year 2024/2025 since now).
- Complementary and integrative laboratory teaching in Forest Pathology, University of Turin (academic year 2016/2017).
- Invited speaker, PhD course “Forest Pathology in the 21st Century”, Swedish University of Agricultural Sciences, Uppsala (2019).
- Lecturer and practical tutor in the Summer School “Emerging pests and diseases in horticultural crops: innovative solutions for diagnosis and management”, EMPHASIS / AGROINNOVA project (2018).
- Seminars on biological invasions, comparative genomics of forest pathogens, truffle genomics and Tuber magnatum transcriptomics at the University of Timișoara, University of Turin, UFZ Leipzig and INRAE Champenoux.

SUPERVISION OF STUDENTS AND RESEARCH STAFF

- Supervisor of two BSc theses in Biological Sciences, University of Eastern Piedmont (2026).
- Supervisor of Roberto Inghes's MSc thesis (University of Turin, 2022); co-supervisor of two MSc theses in Plant Biotechnology (2021).
- Mentor of a research fellow at IPSP-CNR (Dr. Martino Schillaci, 2021).
- *External examiner* for a PhD thesis, Shoolini University of Biotechnology and Management Sciences, India (2016).

EDITORIAL ACTIVITIES AND PEER REVIEW

- Associate Editor, BMC Genomics - “Eukaryote Microbial Genomics” section (since 2018).
- Editorial Board / Review Editor, Frontiers in Microbiology - “Fungi and Their Interactions” section (since 2017).
- Peer reviewer for more than 30 international journals since 2012, including Scientific Reports, BMC Genomics, European Journal of Plant Pathology, Frontiers in Microbiology, Plant Disease and PLOS ONE.

SCIENTIFIC AND PROJECT EVALUATION ACTIVITIES

Since 2022, reviewer for the National Science Centre Poland (NCN), panel NZ9 “Fundamentals of Applied Life Sciences and Biotechnology”. In 2023, reviewer of project proposals for the National Science Foundation (NSF), Division of Environmental Biology, USA. In 2025, CNR expert evaluator for projects submitted under the STEP call (Ministerial Decree 25/10/2024), funded by the Italian Ministry of Enterprises and Made in Italy (MIMIT).

CONFERENCES, AWARDS AND PATENT

- Participation in more than ten international conferences; author of oral presentations at LIFE-IUFRO 2018, S.I.Pa.V. 2015 and the European Conference of Arboriculture 2014. Panel on Diagnostics in Mycology, EPPO (Malta, 2018).
- Poster Award, 13th European Conference on Fungal Genetics (2016); Editor's Choice, Forestry (2014). Co-inventor of Italian industrial patent no. 102017000087211 (2017).

PUBLICATIONS

Articles in international peer-reviewed journals

Bibliometric indicators. Scopus H-index = 19; total citations = 1,197 (6 July 2026).

For updated details: ORCID 0000-0002-1218-9985

1. L. Giovannini, J. E. Marqués-Gálvez, **F. Sillo**, D. De Paola, A. Petrozza, T. Mango, D. Melfi, J. Y. Wang, V. Fiorilli, F. Carriero, R. Balestrini (2026). Arbuscular mycorrhizal symbiosis in tomato roots with a diverse range of carotene accumulation. *Mycorrhiza*, 36, 32. <https://doi.org/10.1007/s00572-026-01277-0>
2. P. Del Boccio, C. D'Errico, **F. Sillo**, V. Montesano, C. Pagliarani, S. D'Alessandro, R. Balestrini, E. Zampieri (2026). Apocarotenoid application differentially shape leaf molecular composition and associated rhizosphere soil microbial communities in tomato plants. *Rhizosphere*, 38, 101325. <https://doi.org/10.1016/j.rhisph.2026.101325>
3. **F. Sillo**, A. Dessì, C. Brunetti, F. Menicucci, S. Beltrami, E. Stathatos, G. Reginato, R. Balestrini (2026). Shade-Avoidance Transcriptome Shifts and Carotenoid Depletion in *Cichorium intybus* Induced by Customized Dye-Sensitized Solar Cell Light Filtering. *Journal of Plant Growth Regulation*. <https://doi.org/10.1007/s00344-026-12119-w>
4. S. Bosco, **F. Sillo**, P. Ruffa, L. Bergonzi, D. Tenni, P. Abbruscato, D. Torello Marinoni, M. Romani, D. Spadaro (2026). Climatic Variables and Virulence May Contribute to the Population Dynamics of *Pyricularia oryzae* at Local Scale. *MicrobiologyOpen*, 15(1), e70196. <https://doi.org/10.1002/mbo3.70196>
5. F. Vita, J. E. Marqués-Gálvez, L. Sabbatini, M. Vergine, E. R. Palm, W. Guidi Nissim, **F. Sillo**, S. De Rose, E. Azzarello, S. Mancuso, R. Balestrini (2026). Soil calcium deficiency in Sorana bean (*Phaseolus vulgaris* L.) ecotype reveals adaptive strategies through differential physiological and yield responses. *Plant Science*, 362, 112840. <https://doi.org/10.1016/j.plantsci.2025.112840>
6. S. De Rose, L. Giovannini, E. Zampieri, P. Del Boccio, **F. Sillo**, C. Pagliarani, W. Chitarra, R. Balestrini, J. E. Marqués-Gálvez (2026). Microbial-mediated resilience in tomato (*Solanum lycopersicum* L.): ecophysiological and molecular signals controlling mycorrhizal and microbiota interactions. *Journal of Experimental Horticulture*, 1, 100001. <https://doi.org/10.1016/j.jxh.2025.100001>
7. A. Dessì[^], C. Spampinato[^], **F. Sillo**[^], S. Valastro, M. Centritto, C. Brunetti, A. Ghirardo, J.-P. Schnitzler, A. Alberti, G. Reginato, A. Rizzo, R. Balestrini (2025). Integrating tunable LED-induced plant responses with novel solar cell technologies for energy-efficient agrivoltaic systems. *Plants, People, Planet, Early View*. <https://doi.org/10.1002/ppp3.70114>. ([^]equal contribution)
8. J. E. Marqués-Gálvez, L. Giovannini, P. Del Boccio, **F. Sillo**, E. Zampieri, C. Pagliarani, W. Chitarra, S. De Rose, F. Vita, R. Balestrini (2025). Arbuscular Mycorrhiza Induce the Regulation of Ca²⁺, ROS, and SOS Pathways Under Salt Stress in Tomato Roots. *Physiologia Plantarum*, 177(6), e70610. <https://doi.org/10.1111/ppl.70610>

9. P. Del Boccio, **F. Sillo**, R. Balestrini, S. D'Alessandro, E. Zampieri (2025). Impact of the combined application of β -cyclocitric acid and mycorrhizal inoculum on tomato response to water deficit. *Horticultural Plant Journal*, Early View. <https://doi.org/10.1016/j.hpj.2025.08.010>.
10. L. Giovannini, C. Pagliarini, E. Cañizares, **F. Sillo**, W. Chitarra, S. De Rose, E. Zampieri, A. Ioannou, A. Spanos, F. Vita, M. González-Guzmán, V. Fotopoulos, V. Arbona, R. Balestrini (2025). Mycorrhization and chemical seed priming boost tomato stress tolerance by changing primary and defence metabolic pathways. *Journal of Experimental Botany*, 76(21), 6410-6433. <https://doi.org/10.1093/jxb/erae457>.
11. **F. Sillo**, C. Salon, M. Lambœuf, V. Montesano, S. Summerer, A. Petrozza, A. Conte, F. Bergese, F. Degan, R. Balestrini, C. Jeudy (2025). A novel P indicator to evaluate bread wheat (*Triticum aestivum* L.) genotypes to identify tolerance to phosphorus deficiency based on two distinct root phenotyping platforms. *Annals of Botany*, 136, 1203–1218. <https://doi.org/10.1093/aob/mcaf091>
12. W. Bousselmi, A. Calvo, T. Gritli, M. M. El Idrissi, T. Reitz, **F. Sillo**, R. Balestrini, B. Mnasri (2025). Legume choice matters: different effects on *Brassica napus* agronomic performance and root-associated bacterial communities in intercropping systems. *Plant and Soil*, 516(2), 2139–2156. <https://doi.org/10.1007/s11104-025-07855-z>
13. L. Giovannini, P. Del Boccio, C. Pagliarini, W. Chitarra, A. Conte, V. Montesano, A. Petrozza, S. Summerer, F. Cellini, E. Cañizares, A. Spanos, F. Bergese, **F. Sillo**, M. Vergine, F. Vita, S. De Rose, M. González-Guzmán, V. Fotopoulos, V. Arbona, R. Balestrini (2025). Phenotyping as a tool to study the impact of seed priming and arbuscular mycorrhizal fungi on tomato response to water limitation. *FEMS Microbiology Letters*, <https://doi.org/10.1093/femsle/fnaf064>
14. T. Radić, E. Gaši, M. Čarija, R. Vuković, V. Arbona, M. González-Guzmán, R. Balestrini, G. Gambino, M. Regvar, M. Likar, **F. Sillo**, K. Hančević (2025). Common mycorrhizal network transfers virus infection signals between neighboring grapevines. *Microbiological Research*, <https://doi.org/10.1016/j.micres.2025.128283>
15. E. Zampieri[^], **F. Sillo**[^], G. Metelli[^], M. A. Cucu, V. Montesano, G. Quagliata, L. Philipp, F. Brescia, A. Conte, L. Giovannini, C. Mennone, A. Fiore, S. Astolfi, D. Savatin, F. Sestili, T. Reitz, R. Balestrini (2025). Insights into the influence of intercropping and arbuscular mycorrhizal inoculation on two modern durum wheat cultivars and their associated microbiota. *Biology and Fertility of Soils*, 61, 85–107. <https://doi.org/10.1007/s00374-024-01872-3>. ([^]equal contribution)
16. H. Ilahi, A. Calvo, S. Dhane, M. M. El Idrissi, L. Ouahmane, M. N. Alfeddy, T. Reitz, **F. Sillo**^{*}, R. Balestrini, B. Mnasri (2025). Impact of bacterial inoculations on *Pisum sativum* L. biometric parameters and associated bacterial and AM fungal communities under semi-arid field conditions in Tunisia. *Applied Soil Ecology*, 205 : 105757 (^{*}corresponding author)
17. E. Gaši, M. Likar, V. Arbona, M. González-Guzmán, K. Hančević, R. Balestrini, M. Čarija, M. Regvar, G. Gambino, **F. Sillo**, T. Radić (2025). Hormonal changes associated with arbuscular mycorrhizal fungi indicate defense-like alterations in virus-stressed grapevine. *Physiologia Plantarum*, <https://doi.org/10.1111/ppl.70136>.
18. F. Menicucci, G. Marino, **F. Sillo**, A. Carli, L. B. dos Santos Nascimento, C. Detti, M. Centritto, C. Brunetti, R. M. Balestrini (2025). Blue and red LEDs modulate polyphenol production in Precoce and Tardiva cultivars of *Cichorium intybus* L. *Frontiers in Plant Science*, 16, 1529804. <https://doi.org/10.3389/fpls.2025.1529804>
19. S. De Rose[^], **F. Sillo**[^], A. Ghirardo[^], J.-P. Schnitzler, R. Balestrini, S. Perotto (2025). Omics approaches to investigate pre-symbiotic responses of the mycorrhizal fungus *Tulasnella* sp. SV6 to the orchid host *Serapias vomeracea*. *Mycorrhiza*, <https://doi.org/10.1007/s00572-025-01188-6>. ([^]equal contribution)
20. **F. Sillo**, S. R. G. A. Blaser, C. Díaz-Tielas, J. Clayton, F. Araniti, A. M. Sánchez-Moreiras, T. S. George, R. Balestrini, D. Vetterlein (2025). Size matters: influence of available soil volume on the root architecture and plant response at transcriptomic and metabolomic levels in barley. *Plant, Cell & Environment*, <https://doi.org/10.1111/pce.15457>.
21. C. Spampinato, S. Valastro, G. Calogero, E. Smecca, G. Mannino, V. Arena, R. Balestrini, **F. Sillo**, L. Ciná, A. La Magna, A. Alberti (2025). Improved radicchio seedling growth under CsPbI₃ perovskite rooftop in a laboratory-scale greenhouse for Agrivoltaics application. *Nature Communications*, 16, 2190. <https://doi.org/10.1038/s41467-025-56227-9>
22. M. A. Cucu, L. Neri, **F. Sillo**, E. Zampieri, A. Calvo, L. Giovannini, C. De Benedictis, A. Zaldei, B. Gioli, R. Baraldi, R. Balestrini (2024). Microbial diversity and cover plants in de-sealed urban soil as strategies for mitigating anthropogenic volatile organic compounds. *Discover Soil*, 1, 22. <https://doi.org/10.1007/s44378-024-00022-3>.
23. S. De Rose[^], **F. Sillo**[^], A. Ghirardo[^], S. Perotto, J.-P. Schnitzler, R. Balestrini (2024). Integration of fungal transcriptomics and metabolomics provides insights into the early interaction between the ORM fungus *Tulasnella* sp. and the orchid *Serapias vomeracea* seeds. *IMA Fungus*, <https://doi.org/10.1186/s43008-024-00165-6>. ([^]equal contribution)
24. A. Calvo, T. Reitz, **F. Sillo**, V. Montesano, E. Cañizares, E. Zampieri, R. Mahmoudi, G. Gohari, W. Chitarra, L. Giovannini, A. Conte, C. Mennone, G. Petruzzelli, M. Centritto, M. González-Guzmán, V. Arbona, V. Fotopoulos, R. Balestrini (2025). Interactions between an arbuscular mycorrhizal inoculum and the root-associated microbiome in shaping the response of *Capsicum annuum* "Locale di Senise" to different irrigation levels. *Plant and Soil*, 508, 361–383. <https://doi.org/10.1007/s11104-024-06806-4>
25. V. Bigini, **F. Sillo**, S. Giulietti, D. Pontiggia, L. Giovannini, R. Balestrini, D. Savatin (2024). Oligogalacturonide application increases resistance to Fusarium head blight in durum wheat. *Journal of Experimental Botany*, 75, 3070-3091.
26. **F. Sillo**, L. Neri, A. Calvo, E. Zampieri, G. Petruzzelli, I. Ferraris, M. Delledonne, A. Zaldei, B. Gioli, R. Baraldi, R. Balestrini (2024). Correlation between microbial communities and volatile organic compounds in an urban soil provides clues on soil quality towards sustainability of city flowerbeds. *Heliyon*, 10, e23594.
27. M. Schillaci, E. Zampieri, C. Brunetti, A. Gori, **F. Sillo**^{*} (2024). Root transcriptomic provides insights on molecular mechanisms involved in the tolerance to water deficit in *Pisum sativum* inoculated with *Pseudomonas* sp. *Planta*, 259, 33. (^{*}corresponding author)
28. R. Balestrini, **F. Sillo**, R. Boussageon, D. Wipf, P. Courty (2024). The hidden side of interaction: microbes and roots get together to improve plant resilience. *Journal of Plant Interactions*, 19, 2323991.
29. G. Lanzavecchia, G. Frascarelli, L. Rocchetti, E. Bellucci, E. Bitocchi, V. Di Vittori, **F. Sillo**, I. Ferraris, G. Carta, M. Delledonne, L. Nanni, R. Papa (2024). Genotype combinations drive variability in the microbiome configuration of the rhizosphere of maize/bean intercropping system. *International Journal of Molecular Sciences*, 25(2), 1288. <https://doi.org/10.3390/ijms25021288>
30. H. Ilahi, E. Zampieri, C. Sbrana, F. Brescia, L. Giovannini, R. Mahmoudi, G. Gohari, M. El Idrissi, M. Alfeddy, M. Schillaci, L. Ouahmane, A. Calvo, **F. Sillo**, V. Fotopoulos, R. Balestrini, B. Mnasri (2024). Impact of two *Erwinia* sp. on the response of diverse *Pisum sativum* genotypes under salt stress. *Physiology and Molecular Biology of Plants*, 30, 249-267.
31. F. Brescia, **F. Sillo**, R. Balestrini, C. Sbrana, E. Zampieri (2023). Characterization of endophytic bacteria isolated from root nodules of lentil in intercropping with durum wheat. *Current Research in Microbial Sciences*, 5, 100205.
32. E. Zampieri, E. Franchi, L. Giovannini, F. Brescia, **F. Sillo**, D. Fusini, I. Pietrini, M. Centritto, R. Balestrini (2023). Diverse plant promoting bacterial species differentially improve tomato plant fitness under water stress. *Frontiers in Plant Science*, 14, 1297090.
33. D. Pasquini, E. Zampieri, A. Ioannou, A. Spanos, **F. Sillo**, L. Giovannini, V. Fotopoulos, C. Brunetti, E. Lumini, R. Balestrini (2023). Impact of the arbuscular mycorrhizal fungal inoculation on growth and biochemical parameters in *Rosmarinus officinalis* and *Lavandula angustifolia*. *Symbiosis*, 91, 107-117.

34. F. Alderotti[^], **F. Sillo**[^], L. Brilli, F. Bussotti, M. Centritto, F. Ferrini, A. Gori, R. Inghes, D. Pasquini, M. Pollastrini (2023). *Quercus ilex* L. dieback is genetically determined: Evidence provided by dendrochronology, $\delta^{13}\text{C}$ and SSR genotyping. *Science of the Total Environment*, 904, 166809. (*equal contribution)
35. S. De Rose, Y. Kuga, **F. Sillo**, V. Fochi, N. Sakamoto, J. Calevo, S. Perotto, R. Balestrini (2023). Plant and fungal gene expression coupled with stable isotope labeling provide novel information on sulfur uptake and metabolism in orchid mycorrhizal protocorms. *The Plant Journal*, 116, 416- 431
36. S. Seddaiu, A. Mello, L. Sarais, A. Mulas, C. Sechi, P. A. Ruiu, A. M. Vettraino, P. Gonthier, **F. Sillo**, C. Bregant, L. Montecchio, B. T. Linaldeddu (2023). Haplotypes distribution and virulence of *Gnomoniopsis castaneae* in Italy. *Journal of Plant Pathology*, 105, 1135–1140. <https://doi.org/10.1007/s42161-023-01459-1>
37. F. Brescia, **F. Sillo**, E. Franchi, I. Pietrini, V. Montesano, G. Marino, M. Haworth, E. Zampieri, D. Fusini, M. Schillaci (2023). The ‘microbiome counterattack’: Insights on the soil and root- associated microbiome in diverse chickpea and lentil genotypes after an erratic rainfall event. *Environmental Microbiology Reports*, 15, 459-483.
38. A. Gori, B. Moura, **F. Sillo**, F. Alderotti, D. Pasquini, R. Balestrini, F. Ferrini, M. Centritto, C. Brunetti (2023). Unveiling resilience mechanisms of *Quercus ilex* seedlings to severe water stress: Changes in non-structural carbohydrates, xylem hydraulic functionality and wood anatomy. *Science of the Total Environment*, 878, 163124.
39. L. Neri, **F. Sillo**^{*}, E. Zampieri, E. Lumini, G. Marturano, C. Esposti, G. Petruzzelli, B. Gioli, A. Zaldei, R. Baraldi (2023). A combined analysis based on microbial communities and volatile organic compounds as a tool to study soil quality in an urban environment. *Pedosphere*, 33, 670- 675 (*corresponding author)
40. V. Fochi, **F. Sillo**, F. Travaglia, J. Coisson, R. Balestrini, M. Arlorio (2022). A Rapid and efficient loop-mediated isothermal amplification (LAMP) assay for the authentication of food supplements based on Maitake (*Grifola frondosa*). *Food Analytical Methods*, 15, 1803-1815.
41. **F. Sillo**, C. Brunetti, F. Marroni, F. Vita, L. dos Santos Nascimento, A. Vizzini, A. Mello, R. Balestrini (2022). Systemic effects of *Tuber melanosporum* inoculation in two *Corylus avellana* genotypes. *Tree Physiology*, 42, 1463-1480.
42. M. Sandrini, L. Nerva, **F. Sillo**, R. Balestrini, W. Chitarra, E. Zampieri (2022). Abiotic stress and belowground microbiome: The potential of omics approaches. *International Journal of Molecular Sciences*, 23, 1091.
43. F. Vita, L. Sabbatini, **F. Sillo**, S. Ghignone, M. Vergine, W. Guidi Nissim, S. Fortunato, A. Salzano, A. Scaloni, A. Luvisi (2022). Salt stress in olive tree shapes resident endophytic microbiota. *Frontiers in Plant Science*, 13, 992395.
44. **F. Sillo**, G. Marino, E. Franchi, M. Haworth, E. Zampieri, I. Pietrini, D. Fusini, C. Mennone, M. Centritto, R. Balestrini (2022). Impact of irrigation water deficit on two tomato genotypes grown under open field conditions: From the root-associated microbiota to the stress responses. *Italian Journal of Agronomy*, 17.
45. M. Schillaci, A. Raio, **F. Sillo**^{*}, E. Zampieri, S. Mahmood, M. Anjum, A. Khalid, M. Centritto (2022). *Pseudomonas* and *Curtobacterium* strains from olive rhizosphere characterized and evaluated for plant growth promoting traits. *Plants*, 11, 2245. (*corresponding author)
46. **F. Sillo**, M. Vergine, A. Luvisi, A. Calvo, G. Petruzzelli, R. Balestrini, S. Mancuso, L. De Bellis, F. Vita (2022). Bacterial communities in the fruiting bodies and background soils of the white truffle *Tuber magnatum*. *Frontiers in Microbiology*, 13.0, 864434.
47. R. Valadares, F. Marroni, **F. Sillo**, R. Oliveira, R. Balestrini, S. Perotto (2021). A transcriptomic approach provides insights on the mycorrhizal symbiosis of the mediterranean orchid *Limodorum abortivum* in nature. *Plants*, 10, 251.
48. G. Lione, L. Giordano, **F. Sillo**, F. Brescia, P. Gonthier (2021). Temporal and spatial propagule deposition patterns of the emerging fungal pathogen of chestnut *Gnomoniopsis castaneae* in orchards of north-western Italy. *Plant Pathology*, 70, 2016-2033.
49. R. Segreto, H. Bazafkan, J. Millinger, M. Schenk, L. Atanasova, M. Doppler, C. Büschl, M. Boeckstaens, S. S. Diaz, U. Schreiner, **F. Sillo**, R. Balestrini, R. Schuhmacher, S. Zeilinger. (2021). The TOR kinase pathway is relevant for nitrogen signaling and antagonism of the mycoparasite *Trichoderma atroviride*. *PloS One*, 16, e0262180.
50. **F. Sillo**, M. Garbelotto, L. Giordano, P. Gonthier (2021). Genic introgression from an invasive exotic fungal forest pathogen increases the establishment potential of a sibling native pathogen. *NeoBiota*, 65, 109-136
51. S. Prencipe, **F. Sillo**, A. Garibaldi, M. Gullino, D. Spadaro (2020). Development of a sensitive TaqMan qPCR assay for detection and quantification of *Venturia inaequalis* in apple leaves and fruit and in air samples. *Plant Disease*, 104, 2851-2859
52. S. Irankhah, **F. Sillo**, L. Nerva, A. Ganjeali, R. Balestrini, W. Chitarra (2020). Combined effects of water deficit, exogenous ethylene application and root symbioses on trigonelline and ABA accumulation in fenugreek. *Applied Sciences*, 10, 2338.
53. F. Ori, M. Leonardi, A. Faccio, **F. Sillo**, M. Iotti, G. Pacioni, R. Balestrini (2020). Synthesis and ultrastructural observation of arbutoid mycorrhizae of black truffles (*Tuber melanosporum* and *T. aestivum*). *Mycorrhiza*, 30, 715-723.
54. **F. Sillo**, P. Gonthier, B. Lockman, T. Kasuga, M. Garbelotto (2019). Molecular analyses identify hybridization-mediated nuclear evolution in newly discovered fungal hybrids. *Ecology and Evolution*, 9, 6588-6605.
55. R. Ios, P. Chrétien, J. Perrault, C. Jeandel, C. Dutech, P. Gonthier, **F. Sillo**, A. Hietala, H. Solheim, J. Hubert (2019). Multiplex real-time PCR assays for the detection and identification of *Heterobasidion* species attacking conifers in Europe. *Plant Pathology*, 68, 1493-1507.
56. L. Giordano[^], **F. Sillo**[^], R. Martinis, A. Rettori, P. Gonthier (2018). Needle disinfection and bioptic wood sampling achieved with a disposable for drill resistance measurement devices. *Urban Forestry & Urban Greening*, 30, 32-36. (*equal contribution)
57. L. Giordano, **F. Sillo**^{*}, M. Garbelotto, P. Gonthier (2018). Mitonuclear interactions may contribute to fitness of fungal hybrids. *Scientific Reports*, 8, 1706. (*corresponding author)
58. **F. Sillo**, L. Giordano, P. Gonthier (2018). Fast and specific detection of the invasive forest pathogen *Heterobasidion irregulare* through a Loop-mediated isothermal AMPlification (LAMP) assay. *Forest Pathology*, 48, e12396.
59. **F. Sillo**, C. Gianchino, L. Giordano, M. Mari, P. Gonthier (2018). Local epidemiology of the wood decay agent *Laetiporus sulphureus* in carob stands in Sicily. *Forest Pathology*, 48, e12414.
60. E. Zampieri, L. Giordano, G. Lione, A. Vizzini, **F. Sillo**, R. Balestrini, P. Gonthier (2017). A nonnative and a native fungal plant pathogen similarly stimulate ectomycorrhizal development but are perceived differently by a fungal symbiont. *New Phytologist*, 213, 1836-1849.
61. **F. Sillo**, L. Giordano, E. Zampieri, G. Lione, S. De Cesare, P. Gonthier (2017). HRM analysis provides insights on the reproduction mode and the population structure of *Gnomoniopsis castaneae* in Europe. *Plant Pathology*, 66, 293-303.
62. **F. Sillo**, J. Fangel, B. Henrissat, A. Faccio, P. Bonfante, F. Martin, W. Willats, R. Balestrini (2016). Understanding plant cell-wall remodelling during the symbiotic interaction between *Tuber melanosporum* and *Corylus avellana* using a carbohydrate microarray. *Planta*, 244, 347-359.
63. **F. Sillo**, E. Savino, L. Giordano, C. Girometta, D. Astegiano, A. Picco, P. Gonthier (2016). Analysis of genotypic diversity provides a first glimpse on the patterns of spread of the wood decay fungus *Perenniporia fraxinea* in an urban park in northern Italy. *Journal of Plant Pathology*, 617-624.

64. L. Ma, P. M. Houterman, F. Gawehns, L. Cao, **F. Sillo**, H. Richter, M. J. Clavijo-Ortiz, S. M. Schmidt, S. Boeren, J. Vervoort, B. J. C. Cornelissen, M. Rep, F. L. W. Takken (2015). The AVR2–Six5 gene pair is required to activate I-2-mediated immunity in tomato. *New Phytologist*, 208(2), 507–518. <https://doi.org/10.1111/nph.13455>
65. G. Lione, L. Giordano, **F. Sillo**, P. Gonthier (2015). Testing and modelling the effects of climate on the incidence of the emergent nut rot agent of chestnut *Gnomoniopsis castanea*. *Plant Pathology*, 64, 852–863.
66. P. Gonthier, F. Guglielmo, **F. Sillo**, L. Giordano, M. Garbelotto (2015). A molecular diagnostic assay for the detection and identification of wood decay fungi of conifers. *Forest Pathology*, 45.0(2.0), 89–101. Wiley Online Library
67. **F. Sillo**, E. Zampieri, L. Giordano, G. Lione, J. Colpaert, R. Balestrini, P. Gonthier (2015). Identification of genes differentially expressed during the interaction between the plant symbiont *Suillus luteus* and two plant pathogenic allopatric *Heterobasidion* species. *Mycological Progress*, 14, 1–13.
68. L. Giordano, **F. Sillo**, F. Guglielmo, P. Gonthier (2015). Comparing visual inspection of trees and molecular analysis of internal wood tissues for the diagnosis of wood decay fungi. *Forestry*, 88, 465–470.
69. P. Gonthier[^], **F. Sillo**[^], E. Lagostina, A. Roccotelli, O. Cacciola, J. Stenlid, M. Garbelotto (2015). Selection processes in simple sequence repeats suggest a correlation with their genomic location: insights from a fungal model system. *BMC Genomics*, 16, 1–12. ([^]equal contribution)
70. **F. Sillo**, M. Garbelotto, M. Friedman, P. Gonthier (2015). Comparative genomics of sibling fungal pathogenic taxa identifies adaptive evolution without divergence in pathogenicity genes or genomic structure. *Genome Biology and Evolution*, 7, 3190–3206.
71. S. Perotto, M. Rodda, A. Benetti, **F. Sillo**, E. Ercole, M. Rodda, M. Girlanda, C. Murat, R. Balestrini (2014). Gene expression in mycorrhizal orchid protocorms suggests a friendly plant–fungus relationship. *Planta*, 239, 1337–1349.
72. R. Balestrini, L. Nerva, **F. Sillo**, M. Girlanda, S. Perotto (2014). Plant and fungal gene expression in mycorrhizal protocorms of the orchid *Serapias vomeracea* colonized by *Tulasnella calospora*. *Plant signaling & behavior*, 9, e977707.
73. P. Gonthier, N. Anselmi, P. Capretti, F. Bussotti, M. Feducci, L. Giordano, T. Honorati, G. Lione, N. Luchi, M. Michelozzi, B. Paparatti, **F. Sillo**, A. M. Vetrano, M. Garbelotto (2014). An integrated approach to control the introduced forest pathogen *Heterobasidion irregulare* in Europe. *Forestry*, 87.0(4.0), 471–481.
74. **F. Sillo**, C. Gissi, D. Chignoli, E. Ragni, L. Popolo, R. Balestrini (2013). Expression and phylogenetic analyses of the Gel/Gas proteins of *Tuber melanosporum* provide insights into the function and evolution of glucan remodeling enzymes in fungi. *Fungal Genetics and Biology*, 53, 10–21.
75. R. Balestrini[^], **F. Sillo**[^], A. Kohler, G. Schneider, A. Faccio, E. Tisserant, F. Martin, P. Bonfante (2012). Genome-wide analysis of cell wall-related genes in *Tuber melanosporum*. *Current genetics*, 58, 165–177. ([^]equal contribution)

BOOK CHAPTERS

1. F. Bergese, L. Giovannini, **F. Sillo**, R. Balestrini (2025). Arbuscular mycorrhizal fungi. In *Forest Microbiology – Biotechnology Applications in Forestry*, Volume 4, pp. 171–188,
2. R. Balestrini, V. Bianciotto, S. Ghignone, E. Lumini, A. Mello, **F. Sillo**, E. Zampieri (2024). Plant–soil biota interactions. *Soil microbiology, ecology and biochemistry*, 303–328. Elsevier.
3. S. De Rose, S. Perotto, R. Balestrini, **F. Sillo** (2023). Gene expression profiling in orchid mycorrhizae to decipher the molecular mechanisms of plant–fungus interactions. *Advances in Orchid Biology, Biotechnology and Omics*, 145–162. Springer Nature Singapore Singapore.
4. **F. Sillo** (2022). Genetic analysis of plant pathogens natural populations. *Plant Pathology: Method and Protocols*, 405–422. Springer US New York, NY.
5. R. Balestrini, **F. Sillo** (2022). Plant–Fungal Interactions: Laser Microdissection as a Tool to Study Cell Specificity. *Plant Pathology: Method and Protocols*, 369–380. Springer US New York, NY.
6. **F. Sillo** (2021). Next Generation Sequencing: Transcriptomics. *Encyclopedia of Mycology Volume 1*, 1–11, Elsevier.
7. R. Balestrini, S. Ghignone, **F. Sillo** (2013). The contribution of new technologies toward understanding plant–fungus symbioses. *Plant Microbe Symbiosis: Fundamentals and Advances*, 201–214. Springer India New Delhi.

DECLARATIONS

I authorise the processing of the personal data contained in this curriculum vitae in accordance with Legislative Decree no. 196/2003 and Regulation (EU) 2016/679.