Prof. Dr. Tanja Mimmo

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Main research areas

Tanja Mimmo is full professor of Agricultural Chemistry at the Faculty of Agricultural, Environmental and Food Sciences, Free University of Bolzano. She is an experienced researcher in the field of Soil Science and Plant Nutrition ranging from basic to applied research for almost 20 years. Her major research topics are a) rhizosphere processes influencing nutrient and metal bioavailability at the soil-root interface; b) rhizodepositions, in particular low molecular weight organic compounds released by roots; c) soil-plant-microorganisms interactions. She is author of more than 150 scientific papers, 2 book chapters and over 150 congress contributions (Scopus listed papers: 183, H-Index 46, Citations 7261, 3.02.2026). Tanja Mimmo has supervised > 20 bachelor thesis, 5 Master thesis and 8 PhD thesis.

Description of academic career

Since 2024	**Vice-Rector for Research and Innovation,** Free University of Bolzano
Since 2024	**Member of the Technical Scientific Committee of Resoil Foundation,** https://resoilfoundation.org/en/foundation/technical-scientific-committee/
Since 2021	**Chair of the Working Group** on *Agroecology* established by ERIAFF (European Region for Innovation in Agriculture, Food and Forestry).
Since 2019	**Full Professor** in Agricultural Chemistry, Faculty of Science and Technology, Free University of Bolzano
2015 – 2019	**Associate Professor** in Agricultural Chemistry, Faculty of Science and Technology, Free University of Bolzano
2009 –2015	Researcher on a fixed term in Agricultural Chemistry, Faculty of Science and Technology, Free University of Bolzano
2008 –2009	Laboratory Technician, Faculty of Science and Technology, Free University of Bolzano
2006 – 2008	Post-Doc at the Department of Agroenvironmental Sciences and Technologies, Università di Bologna., Italy
2008	Marco Polo Scholarship awarded by the University of Bologna at the BOKU- University of Natural resources and Applied Life Sciences, Vienna, Austria
2006	**PhD** in Agricultural, Forestry, and Food Sciences, curriculum Agricultural Chemistry, University of Torino (Italy)

Most important research projects funded (last 5 years)

2023 – 2027	Engaging Citizens in soil science: the road to Healthier sOils – ECHO- funded by the EU commission, Horizon Mission Soil, 5,900,000€ - *Project Coordinator*
2023 – 2025	Healthy Municipal Soils – HuMUS-funded by the EU commission, Horizon Mission Soil, 194,000€ - *Work package leader*
2022 – 2025	What couldn't Charles Darwin see? Exploring the hidden belowground biodiversity of Galápagos Islands –MicroDARWIN- funded by the Free University of Bolzano. Role: Coordinator – 120,000 € - *Project Partner*
2023 – 2025	Next Generation Biomonitoring Vineyard Soils to Support Sustainable Agroecosystems – BioViSo - Joint Projects A-I – 258300€ - *Project Partner*
2018 – 2022	Spatial and temporal nutrient dynamics in the rhizosphere to unravel nutrient mobilization and uptake processes in cultivated plants – NUMICS – funded by the Free University of Bolzano. Role: Coordinator – 97,000 € - *Project Coordinator*
2017 – 2021	Rhizosphere processes affect copper bioavailability in vineyard soils – RHIZOPRO – funded by the Free University of Bolzano. Role: Coordinator – 70,000 € - *Project Coordinator*
2018 –2020	Hydrothermal carbonization of Biogas digestate for hydroPonics: an innovative concept of bio-refinery -HBPonics" – FESR 2014-2020. Role: Partner – 237,000 € *Work package coordinator*
2016 –2019	Optimization of WOOD gasification chain in South Tyrol to prodUce bio-energy and other high-value green Products to enhance soil fertility and mitigate climate change - WOOD-UP – FESR 2014-2020. Role: Partner – 495,000 € *Work package leader*
2013 –2020	Partner, "OPTImised nutrients MAnagement from Livestock production in Alto Adige LIFE-OPTIMAL2012" – LIFE12 ENV/IT/000671. Role: Partner – 230,000 €- *Research unit coordinator*

Most important scientific oral communications at academic conferences

- **Mimmo T** 2023 How heavy metals influence bacterial and fungal alpha-diversity in soil, sediment, and rhizosphere: A meta-analysis, 1st Joint International Conference, 16th international Conference of Biochemistry of Trace Elements & 21st International Conference of Heavy Metals, 6-10 September, 2023, Wuppertal, Germany.
- **Mimmo T** (Keynote lecture) 2021 Rhizosphere dynamics: plant-soil-microorganisms interactions triggering nutrient mobilization and uptake mechanisms, IX International Symposium on Mineral Nutrition of Fruit Crops, Virtual Conference, 28-30 June 2021.
- **Mimmo T (**Keynote lecture) 2021 How fruit trees can increase the solubilization/availability of nutrients in the rhizosphere, 1ª Reunião de Atualização Técnica sobre Calagem e Adubação em Frutíferas", event held online, from October 05 to 09, 2020.
- **Mimmo T** 2020. The role of root-associated bacteria in plant stress alleviation and growth promotion. International PhD Winter School of the Italian Society of Agricultural Chemistry, Torino, Italy, 10-13 February 2020.

- **Mimmo T** (Keynote lecture) 2017 Nutrient availability in the rhizosphere, VIII ISHS Symposium on Mineral Nutrition of Fruit Crops, Bolzano, Italy, 27-30 June 2017.
- **Mimmo T** (Keynote lecture) 2019 Plant-soil-microorganisms interactions driving micronutrient availability in the rhizosphere, 15th International Conference on the Biogeochemistry of Trace Elements (ICOBTE), Nanjing, China, 5-9 May 2019.
- **Mimmo T** 2015. Methods applied in the authentication and traceability of agricultural products. International PhD Winter School of the Italian Society of Agricultural Chemistry, Piacenza, Italy, 9 - 12 February 2015.
- **Mimmo T** 2014. The rhizosphere – the underground information superhighway. International PhD Winter School of the Italian Society of Agricultural Chemistry, Piacenza, Italy, 17-21 February 2014.

5 most important scientific publications in last 5 years

1. Bouaicha, O., Trevisan, F., Tiziani, R., Brenner, M., Weckwerth, W., Onelli, E., Moscatelli, A., **Mimmo, T**., & Borruso, L. V. (2025). From the shoot to the rhizosphere: The short-term cascade impact of aerial microplastic. Environmental and Experimental Botany, 237, Article 106222. https://doi.org/10.1016/j.envexpbot.2025.106222
2. G. Genova, L. Borruso, M. Signorini, M. Mitterer, G. Niedrist, S. Cesco, B. Felderer, L. Cavani, **T. Mimmo**, Analyzing soil enzymes to assess soil quality parameters in long-term copper accumulation through a machine learning approach. *Appl. Soil Ecol.* **195**, 105261 (2024).
3. C. Escudero-Martinez, M. Coulter, R. Alegria Terrazas, A. Foito, R. Kapadia, L. Pietrangelo, M. Maver, R. Sharma, A. Aprile, J. Morris, P. E. Hedley, A. Maurer, K. Pillen, G. Naclerio, **T. Mimmo**, G. J. Barton, R. Waugh, J. Abbott, D. Bulgarelli, Identifying plant genes shaping microbiota composition in the barley rhizosphere. *Nat. Commun.* **13** (2022), doi:10.1038/s41467-022-31022-y.
4. O. Bouaicha, **T. Mimmo**, R. Tiziani, N. Praeg, C. Polidori, L. Lucini, G. Vigani, R. Terzano, J. C. Sanchez-Hernandez, P. Illmer, S. Cesco, L. Borruso, Microplastics make their way into the soil and rhizosphere: A review of the ecological consequences. *Rhizosphere*. **22** (2022), doi:10.1016/j.rhisph.2022.100542.
5. R. Tiziani, M. Puschenreiter, E. Smolders, **T. Mimmo**, J. C. Herrera, S. Cesco, J. Santner, Millimetre-resolution mapping of citrate exuded from soil-grown roots using a novel, low-invasive sampling technique. *J. Exp. Bot.* **72**, 3513–3525 (2021).