

1. SCIENTIFIC CURRICULUM OF GIOVANNI TAMBURINI

Date of birth: 23/05/1984

Institution: Department of Soil, Plant and Food Sciences (DISSPA), University of Bari, Italy

Field of activity: ERC LS9_8 Applied plant sciences, plant breeding, agroecology and soil biology, Italian classification Entomology (AGR/11)

ResearchGate: https://www.researchgate.net/profile/Giovanni_Tamburini

Google scholar: <https://scholar.google.it/citations?user=0u2uLIsAAAAJ&hl=en>

2. EDUCATIONAL BACKGROUND

2012-2015: PhD, School of Crop Sciences, University of Padova, Italy. Thesis on agricultural entomology, agroecology, and landscape ecology. Thesis title: "Testing interactions between above- and belowground ecosystem services" (EU project LIBERATION).

2009-2011: MS, Forestry and Environmental Sciences, University of Padova, Italy. Thesis on forest entomology, forest ecology, and population dynamics of insect pests.

3. WORK EXPERIENCES

2023-present: Associate Professor, DISSPA, University of Bari, Italy.

2020-2023: Researcher (RTD B), DISSPA, University of Bari, Italy.

2021-present: EU external expert, European Commission, Joint Research Center, Food Security. Implementation of systematic literature reviews on the environmental impacts of farming practices.

2019-2020: Post-doctoral fellow, Department of Landscape Ecology and Nature Conservation, University of Freiburg, Germany. Study of the impacts of multiple stressors and their interactions on honeybees, bumblebees and solitary bees (EU project POSHBEE).

2017-2019: Post-doctoral fellow, Department of Ecology, SLU – Swedish University of Agricultural Sciences, Uppsala, Sweden. Study of the impacts of diversified agriculture on biodiversity and multiple ecosystem services (EU project STACCATO).

2015-2017: Post-doctoral fellow, DAFNAE, University of Bari, Italy. Study of the effects of soil fertility and landscape composition on the provision of pollination services in agroecosystems (EU project LIBERATION).

4. ACADEMIC QUALIFICATIONS AND ORGANISATION ACTIVITIES

2021-present: member of the Doctoral School of Biodiversity, Agriculture and Environment, University of Bari.

5. TEACHING

2021-2023: Biodiversity and ecosystem services in agriculture (30 hours, master degree course in Innovation Development in Agrifood Systems) at the University of Bari, Italy.

2020-2023: Innovative and advanced control strategies of plant feeders (30 hours, master degree course in Innovation Development in Agrifood Systems) at the University of Bari, Italy.

2020-2023: Agricultural zoology (30 hours, bachelor degree course in Agricultural Science and Technology) at the University of Bari, Italy.

2020-2022: Experimental design in applied research and data management in R (workshop for PhD students) at the University of Bari, Italy.

2019-2020: Entomology (50 hours, bachelor degree course in Viticulture and Enology) at the University of Salento, Lecce, Italy.

2017-2018: Data management (10 hours, workshop for PhD and master students) at the Department of Ecology, SLU – Swedish University of Agricultural Sciences, Uppsala, Sweden.



6. EDITORIAL ACTIVITY

Associate Editor for *Phytoparasitica* (from 2020). Reviewer for 31 peer-reviewed journals (<https://www.webofscience.com/wos/author/record/937426>) including *Journal of Applied Ecology*, *Nature Sustainability*, *Nature Food*, *Biodiversity and Conservation*, *Agriculture Ecosystems & Environment*, *Journal of Insect Conservation*, *Journal of Pest Science*, *Basic and Applied Ecology*, *Ecological Applications*, *Insects*, *Apidologie*, *Biological diversity and Conservation*, *Ecological Research*, *Journal of Ecology*, *Landscape Ecology*, *Oecologia*, *Plos One*, *Proceedings of the Royal Society B*.

7. CONGRESSES & MEETINGS

- May 2021. 26° Italian Congress of Entomology. Oral presentation: Tamburini G et al. "Fungicide and insecticide exposure adversely impacts bumblebees and pollination services under semi-field conditions". Online seminar at the University of Göttingen (Germany). Invited speaker. Oral presentation: "Managing multiple ecosystem services for sustainable crop production".
- February 2021. Online seminar at the Azarbaijan Shahid Madani University (Iran). Invited speaker. Oral presentation: "Managing ecosystem services for sustainable agricultural production".
- January 2021. Online seminar at the Institute of Geobotany (Leibniz University, Hannover, Germany). Invited speaker. Oral presentation: "Supporting insect-provided ecosystem services for sustainable agriculture".
- December 2019. WholeEarth meeting, University of British Columbia (Vancouver, Canada). Invited by Claire Kremen. Oral presentation Tamburini G, Effects of diversified agricultural farming on biodiversity and multiple ecosystem services.
- September 2019. GfÖ annual meeting 2019 (Münster, Germany). Invited speaker. Tamburini G, Bommarco B, Wanger T, Kremen C, van der Heijden M, Liebman M, Hallin S. Agricultural diversification enhances biodiversity and multiple ecosystem services without compromising yields.
- February 2018. Ecology Department Symposium 2018 (Uppsala, Sweden). Oral presentation: Habitat multifunctionality in agricultural landscapes.
- September 2016. International Congress of Entomology (ICE 2016) (Orlando, Florida). Invited speaker. Tamburini G, Berti A, Morari F, Marini L (2016). Degradation of soil fertility can cancel pollination benefits in sunflower. *Oecologia*, 180, 581-587.
- June 2016. 25° Italian Congress of Entomology. Oral presentation: Tamburini G, De Simone S, Sigura M, Boscutti F, Marini L (2016). Conservation tillage mitigates the negative effect of landscape simplification on biological control. *Journal of Applied Ecology*, 53, 233-241.
- August 2015. 27° International Congress for Conservation Biology and the 4° European Congress for Conservation Biology (ICCB-ECCB) (Montpellier, France). Poster. Tamburini G, De Simone S, Sigura M, Boscutti F, Marini L. Conservation tillage enhances natural pest control in winter cereal crops.

8. SCIENTIFIC RESEARCH ACTIVITIES

Total number of publications in peer-review journals: 30 (Scopus indicators on January 2023: total Impact Factor IF: 174.9; average IF/paper: 5.8; total number of citations: 1652; H index: 16). National scientific qualification for Associate Professor - sector 07/D1 attained on 31/05/2021.

During his academic career (2015-2023), Dr. Tamburini has developed various interests in the study of the ecology of insect species of agricultural interest. He explored the effects of local and landscape management on population dynamics, community ecology, ecosystem services and disservices provided by insects and on general multifunctionality in agroecosystems. In particular, Dr. Tamburini focused on: 1) study of the main ecosystem services and disservices provided by insects in agroecosystems (with particular regard to biological control and pollination) and their interactions with belowground ecosystem services (e.g., soil fertility, water regulation), b) impact of climate change (drought) on plant-herbivore interactions, c) plant-pollinator interactions, d) impacts of anthropogenic



management on population dynamics of native and invasive insects of economic importance or worthy of conservation. Dr. Tamburini applied different methodological approaches such as landscape-scale observational studies, manipulative experiments, and analysis of large databases, in order to study ecological processes at different spatial and temporal scales.

9. POST GRADUATE TRAINING ACTIVITY

PhD main supervisor of 2 student: Gianvito Ragone (from 2021), Sabri Ala Eddine Zaidat (from 2022).
PhD main co-supervisor of Ilaria Laterza (from 2021).

10. SELECTED PROJECTS

Participant to the following projects (2015-2022): "LIBERATION" - Linking farmland Biodiversity to Ecosystem services for effective ecological intensification, funded by EU Seventh Framework Programme (No.311781); "STACCATO" - Sustaining agricultural change through Ecological engineering and optimal use of natural resources, BiodivERsA/FACCE-JPI, (FACCE2014-47); "POSHBEE" project - Pan-European assessment, monitoring, and mitigation of stressors on the health of bees, EU Horizon 2020 (No 773921); "ON": Monitoring, sampling and laboratory analysis activities to detect the presence of harmful organisms on the territory of the Puglia Region; "Digital-Grape": New Digital Technologies and Decision Support Systems for the improvement of quality and sustainability in viticulture; "ASPARA": Innovations and sustainable solutions for the Apulian asparagus, admitted to the Call PSR Sub-Measure 16.2 of the Puglia Region; "PSR-LEG" - Innovation and enhancement of Productivity, Sustainability and Profitability of typical Apulian Legumes, admitted to the Call PSR Sub-Measure 16.2 of the Rural Development Program 2014/2020 of the Puglia Region; "POLLIN-ACTOR": Importance of pollinators for cherry production, crowdfunding project (www.uniba.it/ricerca/dipartimenti/disspa/ricerca/pollin-actor). "PlaTEC" - Plasma-based green technologies for sustainable agrifood production. Horizon Europe Seeds. Scientific advisor for the 2022 monitoring program of *Xylella fastidiosa* vectors in Apulia region (Osservatorio Fitosanitario Regione Puglia). WP leader for "SOS" - Sviluppo di Strategie di controllo sostenibili di *Philaenus spumarius* ed interferenza con la trasmissione di *Xylella fastidiosa*; Task leader for "COVEXY" - Contenimento insetti vettori di *Xylella fastidiosa* con metodi a basso impatto ambientale

11. LANGUAGE SKILLS

Fluent English.

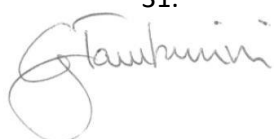
12. PEER REVIEWED PUBLICATIONS

(*equal contribution)

1. Chen M, Schievano A, Bosco S, Montero-Castano A, **Tamburini G**, Pérez-Soba M, Makowski D (2023). Evidence map of the benefits of enhanced-efficiency fertilisers for the environment, nutrient use efficiency, soil fertility, and crop production. *Environmental Research Letters*. (accepted).
2. Laterza I, Dioli P, **Tamburini G**. (2023). Semi-natural habitats support populations of stink bug pests in agricultural landscapes. *Agriculture, Ecosystems & Environment*, 342, 108223.
3. Laterza I, **Tamburini G**, Panzarino O, Loverre P, Mastronardi MG, Dioli P, De Lillo E (2022). The first annotated checklist of Pentatomoidea (Hemiptera: Heteroptera) fauna of Alta Murgia National Park (Apulia region, Southern Italy). *Zootaxa*, 5219, 401-420.
4. **Tamburini G**, Aguilera G, Öckinger E. (2022). Grasslands enhance ecosystem service multifunctionality above and below ground in agricultural landscapes. *Journal of Applied Ecology*.
5. Hodge S, Schweiger O, Klein AM, Potts SG, Costa C, ... **Tamburini G** ... Stout JC. (2022). Design and planning of a transdisciplinary investigation into farmland pollinators: rationale, co-design,



- and lessons learned. *Sustainability*, 14, 10549.
6. Knauer AC, Alaux C, Allan MJ, Dean RR, Dievart V, ... **Tamburini G** ..., Albrecht M. (2022). Nutritional stress exacerbates impact of a novel insecticide on solitary bees' behaviour, reproduction and survival. *Proceedings of the Royal Society B*.
 7. Wintermantel D, Pereira-Peixoto MH, Warth N, Melcher K, ... **Tamburini G** ..., Klein, A. M. (2022). Flowering resources modulate the sensitivity of bumblebees to a common fungicide. *Science of The Total Environment*, 829, 154450.
 8. Schwarz, JM, Knauer AC, Allan MJ, Dean RR, Ghazoul J, **Tamburini, G**, ... Albrecht M. (2022). No evidence for impaired solitary bee fitness following pre-flowering sulfoxaflor application alone or in combination with a common fungicide in a semi-field experiment. *Environment International*, 164, 107252.
 9. **Tamburini G**, Pereira-Peixoto MH, Borth J, Lotz S, Wintermantel D, Allan MJ, ... Klein AM (2021). Fungicide and insecticide exposure adversely impacts bumblebees and pollination services under semi-field conditions. *Environment international*, 157, 106813.
 10. **Tamburini G***, Wintermantel D*, Allan MJ, Dean RR, Knauer A, Albrecht M, Klein AM. (2021). Sulfoxaflor insecticide and azoxystrobin fungicide have no major impact on honeybees in a realistic-exposure semi-field experiment. *Science of The Total Environment*, 146084.
 11. Vanderplanck M, Michez D, Albrecht M, Attridge, ... **Tamburini G** ..., Gérard M (2021). Monitoring bee health in European agro-ecosystems using wing morphology and fat bodies. *One Ecosystem*, 6, e63653.
 12. **Tamburini G**, Bommarco G, Wanger TC, Kremen C, van der Heijden M, Liebman M, Hallin S. Agricultural diversification enhances multiple ecosystem services without compromising yields. *Science advances* 6.45 (2020): eaba1715.
 13. KoKici H, Laterza I, Bari G, Meneghini M, Addante R, **Tamburini G**, De Lillo E. (2020). New bioassays reveal susceptibility of stone-fruit rootstocks to *Capnodis tenebrionis* larvae. *Bulletin of Insectology*, 73, 257-263.
 14. **Tamburini G**, Santoiemma G, O'Rourke M, Bommarco R, Chaplin-Kramer R, Dainese M, Karp D, Kim T, Martin E, Petersen M, Marini L. Species traits elucidate crop pest response to landscape composition: a global analysis. *Proceedings of the Royal Society B*, 287, 20202116.
 15. Aguilera G, Roslin T, Miller K, **Tamburini G**, Birkhofer K, Caballero - Lopez B, ... , Bommarco, R. (2020). Crop diversity benefits carabid and pollinator communities in landscapes with semi - natural habitats. *Journal of Applied Ecology*, 57, 2170-2179.
 16. Dainese M, Martin E, Aizen M, Albrecht M, Bartomeus I, ...**Tamburini G** ..., Ghazoul, J. (2019). A global synthesis reveals biodiversity-mediated benefits for crop production. *Science advances*, 5, eaax0121
 17. **Tamburini G**, Bommarco R, Kleijn D, van der Putten WH, Marini L (2019). Pollination contribution to crop yield is often context-dependent: A review of experimental evidence. *Agriculture, Ecosystems & Environment*, 280, 16-23.
 18. Santoiemma G*, **Tamburini G***, Sanna F, Mori N, Marini L (2019). Landscape composition predicts the distribution of *Philaenus spumarius*, vector of *Xylella fastidiosa*, in olive groves. *Journal of Pest Science*, 1-9.
 19. Martin EA, Dainese M, Clough Y, Báldi A, Bommarco, R... **Tamburini G**... et al. (2019). The interplay of landscape composition and configuration: new pathways to manage functional biodiversity and agroecosystem services across Europe. *Ecology letters*.
 20. **Tamburini G**, Dani E, Bommarco R, Marini L. (2018) Effect of insect herbivory on plant community dynamics under contrasting water availability levels. *Journal of Ecology*, 106, 1819-1828.
 21. **Tamburini G***, van Gils S*, Kos M, van der Putten W, Marini L (2018). Drought and soil fertility modify fertilization effects on aphid performance in wheat. *Basic and Applied Ecology*, 30, 23-31.



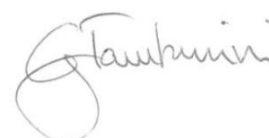
22. Karp DS, Chaplin-Kramer R, Meehan TD, Martin EA, ... **Tamburini G**... et al. (2018). Crop pests and predators exhibit inconsistent responses to surrounding landscape composition. *Proceedings of the National Academy of Sciences of the United States of America*, 201800042.
23. **Tamburini G**, Lami F, Marini L (2017). Pollination benefits are maximized at intermediate nutrient levels. *Proceedings of the Royal Society of London B*, 284, 20170729.
24. Van Gils S*, **Tamburini G***, Marini L, Biere A, van Agtmaal M, Tyc O, Kos M, Kleijn D, van der Putten, WH (2017). Soil pathogen-aphid interactions under differences in soil organic matter and mineral fertilizer. *PloS One*, 12, e0179695.
25. **Tamburini G**, De Simone S, Sigura M, Boscutti F, Marini L (2016). Soil management shapes ecosystem service provision and trade-offs in agricultural landscapes. *Proceedings of the Royal Society of London B*, 283, 20161369.
26. **Tamburini G**, Pevere I, Fornasini N, De Simone S, Sigura M, Boscutti F, Marini L (2016) Conservation tillage reduces the negative impact of urbanization on carabid communities. *Insect Conservation and Diversity*, 9, 438-445
27. **Tamburini G**, Berti A, Morari F, Marini L (2016). Degradation of soil fertility can cancel pollination benefits in sunflower. *Oecologia*, 180, 581-587.
28. **Tamburini G**, De Simone S, Sigura M, Boscutti F, Marini L (2016). Conservation tillage mitigates the negative effect of landscape simplification on biological control. *Journal of Applied Ecology*, 53, 233-241.
29. Marini L, **Tamburini G**, Petrucco-Toffolo E, Lindström SAM, Zanetti F, Mosca G, Bommarco R (2015) Crop management modifies the benefits of insect pollination in oilseed rape. *Agriculture, Ecosystem & Environment*, 207, 61-66
30. **Tamburini G***, Marini L*, Hellrigl K, Salvadori C, Battisti A (2013). Effects of climate and density-dependent factors on population dynamics of the pine processionary moth in the Southern Alps. *Climatic Change*, 121, 701-712

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Bari, 02/03/2023

Giovanni Tamburini




Tamburini G. - March 2023