CURRICULUM VITAE OF DAVIDE FRIZZERA

Academic qualifications

Bachelor's degree in Environmental Sciences and Technologies, obtained on 15/03/2013 at the University of Padova

Master's degree in Environmental and Territorial Sciences and Technologies, obtained on 20/06/2016 at the University of Padova

PhD *cum laude* in Agricultural Sciences and Biotechnologies (XXXII cycle), obtained on 18/03/2020 at the University of Udine

International training periods

2018: Visiting student at Penn State University (Pennsylvania, United States of America).

2025: Visiting researcher at the University of Cambridge (Cambridge, United Kingdom).

Research activity

2016-2020: PhD research at the Department of Agricultural, Food, Environmental and Animal Sciences of the University of Udine. Research entitled "A multifactorial approach to honey bee health: from multiple causes to consequences and possible actions".

2019-2020: Post doc at the Department of Agricultural, Food, Environmental and Animal Sciences of the University of Udine. Research entitled "Interactions between stress factors, nutrition and bee health".

2020-2021: Post doc at the Department of Agricultural, Food, Environmental and Animal Sciences of the University of Udine. Research entitled "Interactions between stress factors, nutrition and bee health".

2021-2022: Post doc at the Department of Agricultural, Food, Environmental and Animal Sciences of the University of Udine. Research entitled "Interactions between stress factors, nutrition and bee health".

2022-2024: Post doc at the Department of Agricultural, Food, Environmental and Animal Sciences of the University of Udine. Research entitled "GOing DEEP in the mutualistic symbiosis between a parasitic mite and a honey bee pathogenic virus (GODEEP)".

2024-2025: Post doc at the Department of Agricultural, Food, Environmental and Animal Sciences of the University of Udine. Research entitled "Identification of the sex pheromone of the parasitoid wasp *Praon volucre*: another step towards integrated control of phytophagous insects".

Teaching activity

A.Y. 2024-2025, teaching assignment as course instructor: "Integrated Protection of Phytophagous Insects", Master's degree programme in Agricultural Sciences and Technologies, 50 hours (6 credits), 2nd semester.

List of scientific publications

1) G. Ortis, D. Frizzera, E. Seffin, D. Annoscia and F. Nazzi (2019). “Honeybees use various criteria to select the site for performing the waggle dances on the comb”. Behavioural ecology and sociobiology, 73: 58 https://doi.org/10.1007/s00265-019-2677-9.

2) D. Annoscia, S.P. Brown, G. Di Prisco, E. De Paoli, S. Del Fabbro, D. Frizzera, V. Zanni, D.A. Galbraith, E. Caprio, C.M. Grozinger, F. Pennacchio e F. Nazzi (2019). “Haemolymph removal by the parasite *Varroa destructor* can trigger the proliferation of the deformed wing virus in mite infested bees (*Apis mellifera*), contributing to enhanced pathogen virulence”. Proceedings of the Royal Society B., 286: 20190331. https://doi.org/10.1098/rspb.2019.0331.

3) D. Frizzera, S. Del Fabbro, G. Ortis, V. Zanni, R. Bortolomeazzi, F. Nazzi e D. Annoscia (2020). “Possible side effects of sugar supplementary nutrition on honey bee health”. Apidologie, 51, 594-608. https://doi.org/10.1007/s13592-020-00745-6.

4) D. Annoscia, G. Di Prisco, A. Becchimanzi, E. Caprio, D. Frizzera, A. Linguadoca, F. Nazzi e F. Pennacchio (2020). “Neonicotinoid Clothianidin reduces honey bee immune response and contributes to Varroa mite proliferation”. Nature communications, 11, 5887. https://doi.org/10.1038/s41467-020-19715-8.

5) M. Pusceddu, D. Annoscia, I. Floris, D. Frizzera, V. Zanni, A. Angioni, A. Satta e F. Nazzi. (2021). "Honey bees use propolis as a natural pesticide against their major ectoparasite". Proceedings of the royal society B., 288: 20212101. https://doi.org/10.1098/rspb.2021.2101.

6) D. Frizzera, A.M. Ray, E. Seffin, V. Zanni, D. Annoscia, C.M. Grozinger e F. Nazzi. (2022). "The beneficial effect of pollen on Varroa infested bees depends on its influence on behavioural maturation genes." Frontiers in Insect Science, 2: 864238.

https://doi.org/10.3389/finsc.2022.864238.

7) D. Breda, D. Frizzera, G. Giordano, E. Seffin, V. Zanni, D. Annoscia, C.J. Topping, F. Blanchini, e F. Nazzi (2022). "A deeper understanding of system interactions could explain contradictory field results on pesticide impact on honey bees". Nature communications, 13: 5720. https://doi.org/10.1038/s41467-022-33405-7.

8) V. Zanni, D. Frizzera, F. Marroni, E. Seffin, D. Annoscia, F. Nazzi (2023). "Age-related response to mite parasitization and viral infection in the honey bee suggests a trade-off between growth and immunity". PLOS ONE, 8(7): e0288821. https://doi.org/10.1371/journal.pone.0288821.

9) D. Frizzera*, V. Zanni, M. D'Agaro, G. Boaro, L. Andreuzza, S. Del Fabbro, D. Annoscia, F. Nazzi (2023). "*Varroa destructor* exacerbates the negative effect of cold contributing to honey bee mortality". Journal of Insect Physiology, https://doi.org/10.1016/j.jinsphys.2023.104571.

10) F. Pavan, D. Frizzera, M. Martini, C. Lujan, E. Cargnus (2024). "Is the removal of nettles along ditches effective in controlling Bois Noir in vineyards?". Agronomy, *14*(4), 643. https://doi.org/10.3390/agronomy14040643.

11) E. Cargnus, S.F.K. Moosavi, D. Frizzera, C. Floreani, P. Zandigiacomo, G. Bigot, D. Mosetti, F. Pavan (2024). "Influence of vineyard inter-row management on grapevine leafhoppers and their natural enemies". Insects *15*(5), 355. https://doi.org/10.3390/insects15050355.

12) D. Frizzera, V. Zanni, E. Seffin, J.R. de Miranda, F. Marroni, D. Annoscia, F. Nazzi (2024). "Assessing lethal and sublethal effects of pesticides on honey bees in a multifactorial context". Science of the Total Environment, 948, 174892. https://doi.org/10.1016/j.scitotenv.2024.174892.

13) F. Pavan, E. Cargnus, D. Frizzera, M. Martini, P. Ermacora (2024). "Interaction between bois noir and the esca disease complex in a vineyard of cultivar Chardonnay". Phytopathologia Mediterranea. 63(2): 303-314. https://doi.org/10.36253/phyto-15052

14) D. Avesani, D. Frizzera, G. Lo Giudice, D. Birtele, V. Lencioni (2024). "Diptera dwelling aquatic and terrestrial habitats in an alpine floodplain (Amola glacier, Italian Alps)" Insects, *5*(11), 904. https://doi.org/10.3390/insects15110904.

15) D. Frizzera, V. Strobl, O. Yanez, E. Seffin, V. Zanni, D. Annoscia, P. Neumann, F. Nazzi. "Interactions between agrochemicals and parasites endangering insect populations" Environmental International. 202, 109664. https://doi.org/10.1016/j.envint.2025.109664.

16) S. Parenzan, D. Frizzera, E. Seffin, V. Zanni, F. Nazzi, D. Annoscia. (2025). "How long can Varroa destructor survive on its host *Apis mellifera*?" Apidologie 56, 90. https://doi.org/10.1007/s13592-025-01198-5

A conoscenza di quanto prescritto dall'art. 76 del D.P.R. 28 dicembre 2000 n. 445, sulla responsabilità penale cui può andare incontro in caso di falsità in atti e di dichiarazioni mendaci, nonché di quanto prescritto dall'art. 75 del D.P.R. 28 dicembre 2000 n. 445, sulla decadenza dai benefici eventualmente conseguenti al provvedimento emanato sulla base di dichiarazioni non veritiere, ai sensi e per gli effetti del citato D.P.R. n. 445/2000 e sotto la propria personale responsabilità: dichiaro che tutte le informazioni contenute nel curriculum vitae sono veritiere.

Udine, 5 dicembre 2025