

CURRICULUM VITAE



IDENTIFICATION

Last name – First name(s)

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Nationality

Date of Birth

OrclD

GRELLA MARCO

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Italian

10 July 1986

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WORK EXPERIENCE

- **Dec 2021 – present** Researcher (RTDa) of Agricultural Mechanics at the Dept. of Agricultural, Forest and Food Sciences of the University of Torino.
- **Ago 2018 – Nov 2018** Consultant for UpToFarm S.r.l. (Grugliasco, IT).
- **Oct 2017 – Nov 2021** Post-doc at the Dept. of Agricultural, Forest and Food Sciences of the University of Torino.
- **Gen 2017 – Sept 2021** Fellowship at the Dept. of Agricultural, Forest and Food Sciences of the University of Torino.
- **Gen 2014 – Dec 2016** Ph.D. student at the Dept. of Agricultural, Forest and Food Sciences of the University of Torino.
- **Gen 2013 – Dec 2013** Fellowship at the Dept. of Agricultural, Forest and Food Sciences of the University of Torino.
- **Jun 2012 – Dec 2012** Fellowship at the Dept. of Agricultural, Forest and Food Sciences of the University of Torino and Fondazione Nuto Revelli (Cuneo, IT).
- **Mar 2012 – Sept 2012** Consultant for ATELIER PROJET studio associato (Aosta, IT).
- **Jun 2011 – Dec 2011** Fellowship at the ex-faculty of Agriculture of the University of Torino.
- **Jun 2010 – Dec 2010** Fellowship at the ex-faculty of Agriculture of the University of Torino.

ACADEMIC AND INSTITUTIONAL ROLES

- **June 2021** National Scientific Habilitation to the role of Associate professor (AGR/09 Agricultural Mechanic - Sector 07/C1 Agricultural, Forest and Biosystems Engineering)
- **2021 – present** Teacher of the course “*Mechanic for precision viticulture*” (50CFU) for the Master Degree in Viticultural and Enological Sciences of the DiSAFA – University of Torino.
- **2021 - present** Teacher of the course “*Laboratory of ergonomics and Agricultural Safety*” (40CFU) for the Bachelor Degree in Sciences and Agricultural Technologies of the DiSAFA – University of Torino.
- **2014 - present** Member of the Department (DiSAFA) board.

EDUCATION AND TRAINING

- 2017 Ph.D. in Agricultural, Forest and Agri-Food Sciences (XXIX Cycle) at the Dept. of Agricultural, Forest and Food Sciences of the University of Torino.
- 2016 Attainment of license (national register) as technician for sprayers inspection.
- 2011 Attainment of professional license (national register) regarding the profession of Agronomist and Forest Doctor.
- 2011 Master Degree in Environmental and Forest Sciences at the University of Torino.
- 2005 High School Diploma (Liceo Scientifico A. Monti – Chieri, IT).

PERSONAL SKILLS	
MOTHER TONGUE	Italian
OTHER LANGUAGE(S)	<p>English [B2] [B2] [C1]</p> <p>Spanish [B2] [B2] [A2]</p>
ORGANIZATIONAL SKILLS	Scientific responsible and/or participant of several national and European projects.
TECHNICAL SKILLS AND COMPETENCES	Expert in the field of Agricultural Mechanics. In particular, the research work focuses on to the development of new technologies aimed to reduce the environmental impact of pesticide spray application with special regards to the spray drift and to test their performances using the international standards (ISO22866:2005). Based on the scientific activities carried out, the alternative methods for the evaluation of potential spray drift generated by sprayers and adopted by National (UNI1607028) and International (ISO22401:2014) regulatory bodies were developed. The research activities is mainly linked to the following topics: agricultural plant protection; crop protection; horticultural crop protection; agricultural technology; ground-based spray application technology; aerial-based spray application technologies (UASS); precision agriculture; variable rate application; chemical-based plant protection products; BCA-based plant protection products; spray drift measurements; spray drift mitigation technology; spray deposition and coverage measurements; droplet size spectra measurements; spray quality evaluation; point source reduction; farm managements of waste liquids containing PPP residues; water quality; soil and water conservation; training on best management practices for crop protection.
DRIVING LICENSES	A3, B

OTHER INFORMATION

PARTECIPATION TO EU AND NATIONAL PROJECTS

OPTIMA project "Optimised Pest Integrated management to precisely detect and control plant diseases crops and open-field vegetables" (grant agreement n. 773718) funded by European Union's Horizon 2020 research and innovation program. (*Research Unit responsible*)

PERFECT LIFE project "PEsticide Reduction using Friendly and Environmentally Controlled Technologies" (grant agreement LIFE17/ENV/ES/000205) funded by LIFE 2017 financial instrument co-financed by the European Fund for Rural Development (ERDF). (*participant*)

Project "PPP exposure models for 3D orchards considering spraying technologies in Southern Europe" (grant agreement GP/EFSA/ENCO/2020/03) funded by European Food Safety Authority (EFSA). (*participant*)

NOVIAGRI project "New applications of Vegetation Indexes in agriculture" funded by Regione Piemonte (FEASR 2014/2020 - Misura 16 del PSR). (*participant*)

DANTE project "Indagine conoscitiva sperimentale per valutare l'efficacia dei Droni per il monitoraggio e la difesa della vite dall'insetto di quarantena prioritario popillia japonica Newman" funded by Regione Piemonte.

PRIN 2017 project "New technical and operative solutions for the use of drones in agriculture" (Prot. 2017S559BB) funded by Italian Ministry of University and Research. (*participant*)

RILO_2022 project "Sviluppo e messa a punto di un sistema a punto fisso per l'applicazione dei prodotti fitosanitari in vigneti allevati a spalliera in aree declivi" funded by University of Torino. (*Project responsible*)

Project "Testing different spray application techniques/technologies for their effect on canopy spray distribution, spray drift and efficacy during wine grapes insecticide spray application" funded by FMC corporation (private company). (*Project responsible*)

SCIENTIFIC PUBLICATIONS

Author of more than 100 papers, 31 of which indexed on Scopus.

Latest publications:

Grella, M., Marucco, P., Llop, J., Gioelli, F. (2023). Special issue on Precision Technologies and Novel Farming Practices to Reduce Chemical Inputs in Agriculture. *Applied Sciences* (Switzerland), 13(3), 1875.

Grella, M., Maffia, J., Dinuccio, E., Balsari, P., Miranda-Fuentes, A., Marucco, P., Gioelli, F. (2023). Assessment of fine droplets (<10µm) in primary airborne spray drift: a new methodological approach. *Journal of Aerosol Science*, 169, 106138.

Mozzanini, E., **Grella, M.**, Marucco, P., Balsari, P., Gioelli, F. (2023). Characterization of irrigator emitter to be used as solid set canopy delivery system: which is best for which role in the vineyard? *Pest Management Science*, 79(2), 584-597.

Biglia, A., **Grella, M.**, Bloise, N., Comba, L., Mozzanini, E., Sopegno, A., Pittarello, M., Dicembrini, E., Eloi Alcatrão, L., Guglieri, G., Balsari, P., Aimonino Ricauda, D., Gay, P. (2022). UAV-spray application in vineyards: Flight modes and spray system adjustment effects on canopy deposit, coverage, and off-target losses. *Science of the Total Environment* 845, 157292.

Garcera, C., Moltó, E., Izquierdo, H., Balsari, P., Marucco, P., **Grella, M.**, Gioelli, F., Chueca, P. (2022). Effect of the Airblast Settings on the Vertical Spray Profile: Implementation on an On-Line Decision Aid for Citrus Treatments, *Agronomy*, 12 (6).

Gioelli, F., **Grella, M.**, Scarpeci, T.E., Rollè, L., Dela Pierre, F., Dinuccio, E., (2022). Bio-Acidification of Cattle Slurry with Whey Reduces Gaseous Emission during Storage with Positive Effects on Biogas Production, *Sustainability* (Switzerland), 14 (19).

Godoy-Nieto, A., Miranda-Fuentes, A., **Grella, M.**, Blanco-Roldán, G.L., Rodríguez-Lizana, A., Gil-Ribes, J.A. (2022). Assessment of Spray Deposit and Loss in Traditional and Intensive Olive Orchards with Conventional and Crop-Adapted Sprayers. *Agronomy* 12(8), 1764.

Grella, M., Allochis, D., Marucco, P., Balsari, P. (2022). Assessment of External Sprayer Cleaning Efficiency by Comparing Different Cleaning Devices, *Sprayer Tank Materials and Operators*. Lecture Notes in Civil Engineering, 252 LNCE, pp. 127-136.

Grella, M., Marucco, P., Gioelli, F., Balsari, P., Athanasakos, L., Mylonas, N., Fountas, S.,

Zwertvaegher, I., Nuyttens, D., Caffini, A., Meroni, F., Rossi, R. (2022). Airblast sprayer electrification for real-time, continuous fan-airflow adjustment according to canopy density during pesticide application in 3D crops How electrification can contribute to increased spray application efficiency VDI Berichte, 2022 (2395), pp. 389-396.

Grella, M., Marucco, P., Oggero, G., Manzone, M., Gioelli, F.S., Balsari, P. (2022). Environmental Evaluation of Vineyard Airblast Sprayers Through a Comprehensive Spray Mass-Balance Approach. Lecture Notes in Civil Engineering, 252 LNCE, pp. 383-393.

Grella, M., Marucco, P., Zwertvaegher, I., Gioelli, F., Bozzer, C., Biglia, A., Manzone, M., Caffini, A., Fountas, S., Nuyttens, D., Balsari, P. (2022). The effect of fan setting, air-conveyor orientation and nozzle configuration on airblast sprayer efficiency: Insights relevant to trellised vineyards. Crop Protection 155, 105921. DOI: 10.1016/j.cropro.2022.105921

Grella, M., Gioelli, F., Marucco, P., Zwertvaegher, I., Mozzanini, E., Mylonas, N., Nuyttens, D., Balsari, P. (2022). Field assessment of a pulse width modulation (PWM) spray system applying different spray volumes: duty cycle and forward speed effects on vines spray coverage. Precision Agriculture, 23(1), 219-252.

Lamare, A., Zwertvaegher, I., Nuyttens, D., Balsari, P., Marucco, P., **Grella, M.**, Caffini, A., Mylonas, N., Fountas, S., Douzals, J.-P. (2022). Performance of a Prototype Boom Sprayer for Bed-Grown Carrots Based on Canopy Deposition Optimization, Ground Losses and Spray Drift Potential Mitigation in Semi-Fiel Conditions. Applied Sciences 12(9), 4462.

Salas, B., Salcedo, R., Ortega, P., **Grella, M.**, Gil, E. (2022). Use of ultrasound anemometers to study the influence of air currents generated by a sprayer with an electronic control airflow system on foliar coverage. Effect of droplet size. Computers and Electronics in Agriculture 202, 107381.

Zwertvaegher, I., Lamare, A., Douzals, J.-P., Balsari, P., Marucco, P., **Grella, M.**, Caffini, A., Mylonas, N., Dekeyser, D., Foqué, D., Nuyttens, D. (2022). Boom sprayer optimizations for bed-grown carrots at different growth stages based on spray distribution and droplet characteristics. Pest Management Science 78(4), 1729–1739. DOI: 10.1002/ps.6792

AFFILIATION TO SCIENTIFIC ACADEMIAS

MEMBER OF THE ITALIAN ASSOCIATION OF AGRICULTURAL ENGINEERING (AIIA)
MEMBER OF THE EUROPEAN SOCIETY OF AGRICULTURAL ENGINEERS (EURAGENG).
MEMBER OF THE ASSOCIATION OF APPLIED BIOLOGISTS (AAB)
MEMBER OF CLUB OF BOLOGNA (COB)

Grugliasco, on 10 May 2023

Signature: Grella Marco

