



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Curriculum Vitae

Family Name: Bertoldo
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Education:

- PhD in Animal and Food Science, Università di Padova (2019-)
- M.Sc. Master's in Agricultural Science and Technologies (2014-2016)
- B.Sc. Bachelor's in Agricultural Science and Technologies (2011-2014)

Research areas:

- Abiotic stress
- Biostimulants
- Blossom end rot
- Next Generation Sequencing

PhD project:

Blossom end rot (BER) is a relevant problem for vegetables especially susceptible (as tomato). Although this physiopathy is traditionally linked to a lack of enough calcium (Ca) in the fruit, the factors involved in the genesis of this physiopathy are still a matter of speculation. Furthermore, BER is reported to generate important economic losses in tomato crops for up to 50 % of the total yield, with also a quality worsening. Nowadays there are few reliable solutions present in the market. One of them is biostimulants, novel substances derived from different matrices. Their use in agriculture is rising due to the beneficial effect on the treated crop. But the characterization of the effects of biostimulants on crops is complex and requires rigorous assessments based on solid knowledge of plant physiology and biochemistry as well as on the development of rigorous experimental methods. "Omics" approaches, such as transcriptomics, will allow us to decipher complex interactions between tomato plants and biostimulant products. The main expected result of my Ph.D. thesis is to accurately predict the response of tomato plants to a certain biostimulant based on molecular analysis to mitigate the effects of blossom end rot. This will allow defining guidelines for the more precise use of biostimulants in tomato. To understand the molecular mechanism involved in this physiopathy, the aims of this Ph.D. thesis are here listed:

- Use of innovative omics and bioinformatics approaches to isolate candidate genes involved in putative mechanisms of tolerance to BER
- Evaluation of gene expression responses in tomato plants after treatment with biostimulants to mitigate the effects of blossom end rot
- Development and use of high-throughput methods for RNA isolation and Real-Time PCR analysis of candidate genes
- Development and use of a digital PCR method for absolute quantification of gene expression in tomato
- Development of a high-throughput method for the identification and characterization at the molecular level of a biostimulants mode of action

Supervisor:

Piergiorgio Stevanato

Publications:

<https://scholar.google.com/citations?user=RROJ6tsAAAAJ>