

Felipe Barreto Da Silva

Gulf Coast Research and Education Center
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EDUCATION

Ph.D. in Plant Protection (October 2022)

São Paulo State University (UNESP), Botucatu, Brazil

Relevant Coursework: General Plant Virology and Entomology

M.S. in Plant Protection (July 2019)

São Paulo State University (UNESP), Botucatu, Brazil

Thesis Title: Dissertation Title: Effects of the cowpea mild mottle virus in soybean cultivars in Brazil

Relevant Coursework: Plant Virology and Pest Management

B.S. in Agronomy (June 2017)

Federal University of São Carlos (UFSCar), Araras, Brazil

INTERNATIONAL EDUCATION

Summer School “Plant Healthy and Quality” – Université D’Angers, France.

Jun 2019 – Jul 2019.

Non-Degree International Student in Agricultural Engineering – University

of Wisconsin, River Falls, USA. Aug 2013 – Dec 2014.

RESEARCH EXPERIENCE

University of Florida – Gulf Coast Research and Education Center, Balm, Florida – (Nov 2022 – Present)

Postdoctoral Researcher Associate

Supervisor: Dr. Hugh Smith

- Develop taxonomic and molecular methods for improved diagnosis of invasive and endemic thrips.
- Investigate whitefly and thrips resistance to insecticides.
- Summarize and communicate research results to broad audiences including growers and graduate students.

Graduate Student Research Assistant – Ph.D. (Aug 2019 – October 2022)
São Paulo State University (UNESP), Botucatu, Brazil

Plant Virology and Plant-Virus-Vector Interaction Laboratory – LAVIV

Supervisor: Renate Krause Sakate

- Collect insects (i.e., whitefly and thrips).
- Establish whitefly colonies.
- Collect and molecular identification (PCR/Sanger sequencing) of whitefly species.
- Develop molecular methods (RFLP and PCR) for thrips identification.
- Survey of whiteflies and plant viruses from soybean fields throughout São Paulo State.
- Evaluate virus-vector interaction.
- Evaluate the physiological quality of seeds from diseased plants.
- Identify new viruses in soybean using high-throughput sequencing.
- Evaluating the damage caused by whitefly and thrips-transmitted virus in the soybean crop through field trials.

Graduate Student Research Assistant – M.S. (Aug 2017 – Jul 2019)
São Paulo State University (UNESP), Botucatu, Brazil

Plant Virology and Plant-Virus-Vector Interaction Laboratory – LAVIV

Supervisor: Renate Krause Sakate

- Identified differences in virus transmission between different genetic groups of whiteflies.
- Reported the effects of whitefly, *Bemisia tabaci* transmitted virus cowpea mild mottle virus (CPMMV), in soybean cultivars in Brazil.
- Evaluated the damage caused by a whitefly-transmitted virus in the soybean crop through field trial.

Research & Development in Crop Protection Intern – (Jan 2017 – Jul 2017)
Dow Agrisciences Industrial Ltda. Mogi Mirim Field Station

Supervisor: Luis Claudio Vieira da Cunha

- Conducted, maintained, and evaluated field trials.
- Planned, conducted, maintained, and evaluated laboratory trials.
- Prepared pesticides (insecticides, fungicides, and herbicides) for application in field trials.
- Evaluated the efficacy of chemical pesticides against key pests, diseases, and weeds for different horticultural and field crops through field trials.
- Prepared and applied inoculum for field trials.
- Developed bioassays to evaluate insecticide susceptibility in different field crop pests.
- Summarized research results to researchers and leaders.

Undergraduate Intern – (Feb 2015 – Dec 2016)

Federal University of São Carlos (UFSCar), Araras, Brazil

Molecular Genetics Laboratory – LAGEM

Supervisor: Alfredo Seiiti Urashima

- Performed research and in plant disease diagnoses.
- Performed extension services in disease identification for local farmers, including classical, serological, and molecular (PCR) tool.
- Investigated the gene flow in *Magnaporthe grisea* causing the wheat blast.

Undergraduate Intern – (Jun 2012 – Sep 2012)

Federal University of São Carlos (UFSCar), Araras, Brazil

Plant Physiology and Tissue Culture Laboratory

Supervisor: Lee Tseng Cheng Gerald

- Studied tissue culture techniques for a biofactory of *in vitro* production of sugar cane and orchids.
- Studied the influence of LED on the development of *in vitro* callus in sugarcane.

Undergraduate Student Academic Training – (May 2014 – Aug 2014)

University of Minnesota, Twin Cities Campus, USA

Supervisor: Brian J. Steffenson

- Collaborated in the Cereal Disease Resistance Project at the Plant Pathology Department.
- Performed field assays involving stem rust resistance in barley and wheat.
- Prepared and applied inoculum for field trials.
- Planning, conducting, maintaining, and evaluating field trials.

Undergraduate Intern – (Dec 2011 – Jul 2013)

Federal University of São Carlos (UFSCar), Araras, Brazil

Agricultural Sciences Study Group – GECA

Supervisor: Patricia Andrea Monquero

- Studied weed control, herbicides, and their effects in soil.
- Conducted experiments with pesticides on field crops such as maize and soybean.

Undergraduate Intern – (Jun and Jul 2011)

State University of Campinas (UNICAMP), Campinas, Brazil

Plant Physiology Laboratory

Supervisor: Paulo Mazzafera

- Analyzed lignin in sugarcane samples, within the BIOEN-FAPESP project.
- Analyzed nitrogen and amino acids in citrus plants.

PUBLICATIONS

Peer-reviewed publications

Ribeiro-Junior, M. R., **Barreto da Silva, F.**, Marubayashi, J. M., Uzan, J., Nogueira, A. M., Muller, C., Nascimento, D. M., Yuki, V. A., Narita, N., Pavan, M. A., Ochoa-Corona, F. M., Krause-Kakate, Renate . Molecular and biological characterization of an isolate of the potyvirus passiflora virus Y naturally infecting soybean (*Glycine max*) in Brazil. *Archives Of Virology*, v. 1, p. 1, 2022.

Bello, V.H., **Barreto da Silva, F.**, L.F.M. Watanabe, E. Vicentin, C. Muller, R.C.O.F. Bueno, J.C. Santos, B. Rossitto De Marchi, A.M. Nogueira, V.A. Yuki, J.M. Marubayashi, M.M.P. Sartori, M.A. Pavan, M. Ghanim, R. Krause-Sakate. Detection of *Bemisia tabaci* Mediterranean cryptic species on soybean in São Paulo and Paraná States (Brazil) and interaction of cowpea mild mottle virus with whiteflies. *Plant Pathology* 70(6): 1508-1520, 2021

Krause-Sakate, R., L.F.M. Watanabe, E.S. Gorayeb, **F. Barreto Silva**, D.L. Alvarez, V.H. Bello, A.M. Nogueira, B. Rossitto De Marchi, E. Vicentin, et al. Population dynamics of whiteflies and associated viruses in South America: Research Progress and Perspectives. *Insects* 11(12): 847, 2020

Barreto da Silva, F., C. Muller, V.H. Bello, L.F.M. Watanabe, B. Rossitto De Marchi, L.M. Fusco, M.R. Ribeiro-Junior, G.B. Minozzi, L.M. Vivan, et al. Effects of cowpea mild mottle virus on soybean cultivars in Brazil. *PeerJ* 8: e9828, 2020

Bello, V.H., L.F.M. Watanabe, L.M. Fusco, B. Rossitto De Marchi, **F. Barreto da Silva**, E.S. Gorayeb, M.F. Moura, I.M. de Souza, C. Muller, F.J.S. Salas, V.A. Yuki, R.C.F.O. Bueno, M.A. Pavan, R. Krause-Sakate. Outbreaks of *Bemisia tabaci* Mediterranean species in vegetable crops in São Paulo and Paraná states, Brazil. *Bulletin Of Entomological Research* 110(4): 487-496, 2020

Bello, V. H., E.S. Gorayeb, L.F.M. Watanabe, B. Rossitto De Marchi, M.R. Ribeiro-Junior, E. Vicentin, **F. Barreto da Silva**, and R. Krause-Sakate. First Report of Tomato chlorosis virus infecting cucumber in Brazil. *Plant Disease* 104(2): 603, 2019

Watanabe, L.F.M., V.H. Bello, B. Rossitto De Marchi, **F. Barreto Silva**, L.M. Fusco, M.M.P. Sartori, M.A. Pavan, R. Krause-Sakate. Performance and competitive displacement of *Bemisia tabaci* MEAM1 and MED cryptic species on different host plants. *Crop Protection* 124: 104860, 2019

Rossitto De Marchi, B., V.H. Bello, L.F.M. Watanabe, **F. Barreto da Silva**, C. Müller, M.A. Pavan, R. Krause-Sakate. Characterization and complete genome sequence of groundnut ringspot orthotospovirus in soybean in Brazil. *Journal Of Plant Pathology* 101(2): 401, 2018

Silva, P. V., Monquero, P. A., **Barreto da Silva, F.**, Bevilaqua, N. C., Malardo, M. R. Influence of sugarcane straw and sowing depth on the emergence of weed species. *Planta Daninha*, v. 33, p. 405-412, 2015.

Gomes, D. S., Bevilaqua, N. C., **Barreto da Silva. F**, Monquero, P. A.,
Supressão de plantas espontâneas pelo uso de cobertura vegetal de crotalária
e sorgo.. Revista Brasileira de Agroecologia, v. 9, p. 206-213, 2014.

GRANTS

Pending

Contributor

São Paulo Research Foundation (FAPESP), Regular Research Grant/Continuous Funding Stream. Study of viruses belonging to the genera Carlavirus, Orthotospovirus and Potyvirus infecting soybean and their vector. Submitted December 2021. US\$ 40,000.00.

Awarded

Contributor

São Paulo Research Foundation (FAPESP), Ph.D. Scholarship. Cowpea mild mottle virus in Soybean: Virus-Vector Interaction, Incidence and Associated Vector, Virus Variability and Impacts on Physiological Quality of Seeds from Diseased Plants. 2021 – 2023.

São Paulo Research Foundation (FAPESP). Regular Research Grant/Continuous Funding Stream. Virus interactions with different cryptic species of Bemisia tabaci, competition among species, insecticide susceptibility and Next Generation Sequencing of Bemisia tabaci collected in Brazil. U\$47,288.42. 2018 – 2020.

Higher Education Personnel (CAPES), Brazil Scientific Mobility Program. Sandwich Undergraduate Program at University of Wisconsin, River Falls. 2013 – 2014.

National Council for Scientific and Technological Development (CNPq). Undergraduate Research Scholarship. Gene flow in Magnaporthe grisea causing the wheat blast. 2015 – 2016.

São Paulo Research Foundation (FAPESP), Undergraduate Research Scholarship. Influence of temperature, light, soil texture, sowing depth and amount of straw cane sugar in the germination of seeds of Ipomoea purpurea, Merremia aegyptia (Convolvulaceae) and Luffa aegyptiaca (Cucurbitaceae). 2012 – 2013.

PRESENTATIONS

Invited Speaker

Barreto da Silva, F. Whitefly, Bemisia tabaci Management: Current events and perspectives. XIII Winter School in Agricultural Entomology. Jaboticabal, Sao Paulo, Brazil. August 2019.

Barreto da Silva, F. Viruses transmitted by Bemisia tabaci in soybean. III Lecture Cycle: Current events in Plant Health and Commemoration of 30 years of the Graduate Program in Agronomy: Plant Protection. Botucatu, Sao Paulo, Brazil. September 2018.

Barreto da Silva, F. Guest lecture to Undergraduate School at the Sagrado Coração de Jesus University, Bauru, São Paulo, Brazil 2018.

Professional Conferences - Posters

Barreto da Silva, F., Uzan, J., Marubayashi, J. M., Raposo, R. S., Martinez, C. C., Ribeiro-Junior, M. R., Nogueira, A. M., Pavan, M. A., Krause-Sakate, R. Bemisia tabaci Mediterranean cryptic species survey on soybean in Sao Paulo State (Brazil) and its interaction with cowpea mild mottle virus. 2022. 15th International Symposium of Plant Virus Epidemiology. Madri, Spain, June 2022.

Souza, I. M., Bello, V. H., **Barreto da Silva, F.**, Gorayeb, E. S., Pavan, M. A., Krause-Sakate, R. Begomovirus and Crinivirus associated with the presence of Bemisia tabaci Mediterranean (MED or biotype Q) in vegetables in São Paulo State. 51^o Brazilian Congress of Plant Pathology. Recife, Pernambuco, Brazil, September 2019.

Barreto da Silva, F., Muller, C., Fusco, L. M., Bello, V. H., Watanabe, L. F. M., Minozzi, G. B., Tamai, M. A., Krause-Sakate, R. Bemisia tabaci survey associated with soybean and cotton in middle east Bahia State. XXVI Congresso Brasileiro e X Congresso Latino-Americano, 2018, Gramado, Rio Grande do Sul, Brazil. September 2018.

Gorayeb, E. S., Bello, V. H., Watanabe, L. F. M., **Barreto da Silva, F.**, Rossitto De Marchi, B., Krause-Sakate, R. Performance of Bemisia tabaci on Datura stramonium and its potential as an alternative host of Tomato severe rugose virus. XXIX Brazilian Congress of Virology & XIII Mercosur Meeting of Virology, Gramado, Rio Grande do Sul, Brazil, September 2018.

LEADERSHIP EXPERIENCE

São Paulo State University (UNESP)

- Graduate student representative

Federal University of São Carlos (UFSCar)

- Undergraduate student representative

MENTORING

Undergraduate Committee Member

Fermino, Luiz Guilherme da Silva. 2021. Final Paper Title: Techniques for measuring electrical conductivity in precision agriculture. Final Paper. Federal University of Sao Carlos (UFSCar), January.

(Chair: Rubsamar Stolf)

Raposo, Rodrigo de Sarandy. 2023. Final Paper Title: Transmission properties of Cowpea mild mottle virus (CPMMV) by Bemisia tabaci Middle East Asia Minor 1 – MEAM1 (biotype B) and Mediterranean – MED (biotype Q) in soybean. Sao Paulo State University (UNESP), July.

(Chair: Renate Krause-Sakate)

MEMBERSHIPS

- Entomological Society of America (2023 – Present)
- The American Phytopathological Society (APS) (2014).
- Crop and Soil Science Club, UWRF (2013 – 2014).
- Destination Domestic Service Trip, UWRF (2014). Helping Living Lands & Waters to clean up the banks of the Mississippi River in Memphis, Tennessee.

EVENT PLANNING

- Graduation studies abroad: Sharing Experiences. São Paulo State University, Botucatu, Brazil. November 2020
- Third Lecture Cycle: Current events in Plant Health and Commemoration of 30 years of the Graduate Program in Agronomy: Plant Protection. São Paulo State University, Botucatu, Brazil. September 2018.
- 38° Paulista Congress of Plant Pathology. Araras, Brazil, February 2015.

RELATED PROFESSIONAL SKILLS

Field Skills

- Planning, conducting, maintaining, and evaluating field trials.
- Planting and harvesting.
- Applying pesticides using a backpack spray or drench application.
- Seed treatment.
- Insect collection and identification.
- Plant disease collection and identification.

Laboratory Skills

- Extensive knowledge in molecular techniques.

- DNA/RNA extraction of insects and plants, polymerase chain reaction (PCR), reverse transcription polymerase chain reaction (RT-PCR), restriction fragment length polymorphism (RFLP), gel electrophoresis, and primer design.
- Preparing samples for Sanger sequencing.
- Seed quality evaluation.

Sequence Analysis & Sequencing Skills

- Geneious for sequence analysis and QIAGEN CLC Genomics Workbench for de novo genome assembly
- BLASTn.

Other Relevant Skills

- Proficient in Microsoft Excel, Word, and PowerPoint
- Language proficiencies: Portuguese (Native language). Fluent in English. Can read and understand Spanish.

REFERENCES

Hugh A. Smith

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