Marcelo Mendes Rabelo

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Brazilian, US Permanent Resident

PROFESSIONAL SUMMARY

Experienced agronomist with a PhD in Entomology with over a decade of research experience, specializing in insect toxicology with a solid background in testing new and proven technologies (biologicals, insecticide, Bt proteins) for crop protection. Hands-on experience managing research in laboratory, field, and greenhouse settings, leading projects focusing on a diversified crop system encompassing vegetables, fruits, horticulture, row crops, and turfgrass. The main area of expertise is lepidopteran pest management with insecticides and biologicals.

SKILLS

- Proficient in laboratory, field, and greenhouse research (100+ trials performed)
- Good Laboratory Practices (GLP) – EPA-NAICC
- Agrochemical formulation knowledge
- Strong communication and outstanding presentation skills
- Experienced coordinating field trials, CRO's, product performance
- Skilled in R&D (proof-of-concept)
- Visualizations of scientific data (presentations, reports, marketing)
- Proficient in data analysis and statistical software (e.g., PoloPlus, SAS, R, ARM, Sigma Plot)
- Knowledgeable in entomological research methods and techniques
- Language skills: English (fluent), Portuguese (native), Spanish (beginner)

EDUCATION

Graduate Research Assistant (Ph.D.), University of Florida /Universidade Federal de Vicosa 2016 – 2020

- Bt toxins and insecticides against noctuid pests: susceptibility, parental effects, and growth potential. Advisors: Eliseu J. G. Pereira, Silvana Paula-Moraes

Graduate Research Assistant (MS), Universidade Federal de Vicosa 2014 – 2016

- Lethal and sublethal effect of toxins and Bt plants on Spodoptera eridania. Advisor: Eliseu J. G. Pereira

Undergraduate Research Assistant, Universidade Estadual de Montes Claros 2012 - 2014

- Conducted studies on *Beauveria bassiana* and *Metharizium anizopliae* for the development of a biopesticide for fruit fly and coleoptera control.

PROFESSIONAL EXPERIENCE

Owner and Research Coordinator, IVA SCIENCES, Pensacola-FL 2022-Present

- Established and managed a fully operational research company (http://ivasciences.com), leading proof-of-concept for the development of a biopesticide for pest control in peanut, coordinating personnel, services, and external providers, while also pursuing funding acquisition.
- Served as a Contract Research Organization (CRO), leading diverse research projects, including traits performance, insect and disease field trials, biological performance, and laboratory bioassays. Member of the National Alliance of Independent Crop Consultants (NAICC) and an independent researcher.

Postdoctoral, University of Florida, Milton-FL 2020 – 2022

- Successfully selected a resistance population through multi-generation exposure to sublethal doses,

with responsibilities including experimental design, massive insect collection for appropriated genetic variability, rearing, and bioassays.
- Led multiple product performance studies in the field and laboratory, collaborating with industry, extension agents, and row crop growers across the FL Panhandle.

Research Scholar, University of Florida, Milton-FL **2018 – 2020**

- Successfully developed and managed over 10 research projects annually, primarily focusing on the efficacy of Bt traits, Cry and VIP proteins, and insecticides, including trait assessment through Sentinel Plot and Commercial Field monitoring, pest artificial infestation, and damage assessment across row crops such as corn, cotton, soybean, and peanut.
- Over 100 diet overlay and leaf-disc bioassays conducted with lepidopteran pests (*Spodoptera frugiperda, S. exigua, S. eridania, S, latifascia, S. ornithogali, Helicoverpa zea, Chloridea virescens, Agrotis ipsilon, Anticarsia gemmatalis*) to document susceptibility to Bt and insecticides as part of resistance monitoring.
- Trained personnel on pest identification, collection, rearing, and testing for crop protection, and coordinated lab routine, including day-to-day activities, budget, supplies, SOP, and GLP.
- Collaborated in the development of two mobile apps for pest management (Cotton Pests in FL and My IPM) as a result of region-specific information.

RELEVANT PUBLICATIONS

- Rabelo, Marcelo M., et al. "Contrasting susceptibility of lepidopteran pests to diamide and pyrethroid insecticides in a region of overwintering and migratory intersection." Pest Management Science 76.12 (2020): 4240-4247.
- Rabelo, M. M. et al., "Spodoptera exigua (Hubner)(Lepidoptera: Noctuidae) fitness and resistance stability to diamide and pyrethroid insecticides in the United States." Insects 13.4 (2022): 365.
- Rabelo, M. M. et al., "Demographic performance of Helicoverpa zea populations on dual and triple-gene Bt cotton." Toxins 12.9 (2020): 551.
- Rabelo, M. M. et al., "Bt-toxin susceptibility and hormesis-like response in the invasive southern armyworm (Spodoptera eridania)." Crop protection 132 (2020): 105129.
- Rabelo, M. M. et al., "Like parents, like offspring? Susceptibility to Bt toxins, development on dual- gene Bt cotton, and parental effect of Cry1Ac on a nontarget lepidopteran pest." Journal of Economic Entomology 113.3 (2020): 1234-1242.

Google Scholar: https://scholar.google.com/citations?user=j8ybyUwAAAAJ&hl=en&oi=ao

PRESENTATION IN SCIENTIFIC CONFERENCES AND AWARDS

- First place in the Ph.D. Student Oral Presentation Competition: Rabelo, M. M., et al., Spodoptera exigua (Hubner) (Lepidoptera: Noctuidae) resistance to diamide and pyrethroid in the United States: stability and fitness. In 2021 Southeastern Branch Meeting. ESA.
- Toxins 2021 Travel Awards – Rabelo, M. M., et al., Demographic Performance of Helicoverpa zea Populations on Dual and Triple-Gene Bt Cotton. Toxins, v. 12, p. 551, 2020. https://doi.org/10.3390/toxins12090551
- First place in the Ph.D. Student Oral Presentation Competition: Rabelo, M. M., et al., Parental effect resulting from exposure to Cry1Ac protein in Spodoptera cosmioides (Lepidoptera-Noctuidae). In 2019 Southeastern Branch Meeting. ESA.
- Second place in the Undergraduate Student Poster Competition: Hemphill, C. N., Rabelo, M. M., et al., (2019, March). Infestation method with natural egg deposition of Helicoverpa zea for ecological studies. In 2019 Southeastern Branch Meeting. ESA.

PROFESSIONAL DEVELOPMENT

- Connected Leadership - Yale University - 2024
- Agrobiology of Agrochemical Formulations II – Bioscience Academy – 2024
- Pesticide Label Trainee – EPA – 2024
- Good Laboratory Practices – National Alliance of Independent Crop Consultants – 2023
- Efficacy Field Trials - National Alliance of Independent Crop Consultants – 2023
- Foundations of Project Management – Coursera – 2023
- Lepidopteran and Bt traits meeting – NC246 -2019, 2021
- Statistic Methods Applied in Entomology – Federal University of Viçosa - 2021
- Write Winning Grant Proposals – University of Florida, 2021
- ARM (Agriculture Research Management) – Entomology Society of America, 2020
- Hazardous Waste Management – UF 2021
- Chemical Hygiene Plan – 2021
- Pesticide License – IFAS/Extension, University of Florida, 2018-2025

PROFESSIONAL SOCIETY MEMBERSHIPS

Nacional Alliance of Independent Crop Consultants — Jan 2022 – Present
Entomological Society of America — Dec 2018 – Present
- Southeastern Branch of the Entomological Society of America — Dec 2021 – Present

PROFESSIONAL SERVICES

- Guest editor on Methods Collections - Journal of Visualized Experiments - Research methods for rearing and testing insect pests in crop protection. https://www.jove.com/methods- collections/editor/1715/marcelo-mendes-rabelo
- US NC245 – Oral presentation: Management of corn earworm using insecticides and Bt technology in the FL Panhandle. 2021.
- Speaker and organizer: Workshop - Rabelo, M. M., Life table studies in lepidopteran pests. West Florida Research and Education Center, University of Florida, 2020.
- Speaker and organizer: Workshop - Rabelo, M. M., Paula-Moraes, S. V., Principles and methods for toxicological bioassays with insect pests. West Florida Research and Education Center, University of Florida, 2019.
- Review service- Neotropical Entomology (3), Insects (3), Plant Protection Science/ Czech Academy of Agricultural Sciences (2), International Journal of Pest Management (1), Plos One (2).

REFERENCES

Eliseu Jose Guedes Pereira
Master's and PhD advisor
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Entomology Department -UFV Brazil
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