Livia Maria Silva Ataide

September 18th, 1983/ Belo Horizonte, Minas Gerais, Brazil
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Education

2009 – 2013 — **PhD in Entomology**
Joint project at Federal University of Viçosa, Viçosa, Minas Gerais, Brazil and University of Amsterdam, Amsterdam, The Netherlands
Title of the PhD Thesis: *Tetranychus evansi* evades plant defence
Brazilian supervisor: Dr. Angelo Pallini Filho; Dutch supervisor: Dr. Merijn Kant

2007 - 2009 — **Master's degree in Entomology**
Federal University of Viçosa, Viçosa, Minas Gerais, Brazil
Title of the Master Thesis: Behavioural and chemical factors involved in the choice of *Solanum lycopersicon* genotypes by *Tuta absoluta* (Lepidoptera: Gelechiidae) females.
Supervisor: Dr. Eraldo R. Lima

2002 - 2005 — **Bachelor's degree in Biology**
Methodist University Center Izabela Hendrix, Belo Horizonte, Minas Gerais, Brazil
Title of the Undergraduate Thesis: Evaluation of the phytotoxicity of the organic compound produced from organic matter using biological assays with tomato seeds (*Lycopersicum esculentum*)
Supervisor: Karla Garcia Tavares

Work Experience

2021 – present — **Postdoctoral Researcher in Entomology/ Acarology**
University of Florida (UF)
Department of Entomology and Nematology, Tropical and Researcher Education Center (TREC) Homestead, Florida, United States

- **Postdoctoral researcher, member of the projects** (from December 2021 to present): Mitigation of Lychee Erinose mite; Mitigation of Acarine Pests of Hemp (Projects funded by United States Department of Agriculture – USDA), *for details about the project see section 'Research Projects' below*)
- **Field work**: mite and predatory mite survey in the native area of the Tropical Research and Education Center at the University of Florida (TREC-UF), Entomology and Nematology Department and adjacent parks and groves.
- **Lab work**: analytical chemistry, molecular biology techniques (DNA isolation, primer design, PCR, gel electrophoresis, qPCR), toxicity bioassays (pesticides, biorational oils application), bioassays with spider mites, eriophyid mites and predatory mites.
- Writing of **project proposals and reports** to governmental organizations.
- Writing and publication of **articles** in scientific journals.
- Sampling and data collection, analysis, and presentation.
- **Supervision of graduate and undergraduate students**.
- Presentation and lectures at UF and at National and International Conferences.
- **Publication of the results in scientific journals of Entomology** (*see section 'Publications'*).

2019 - 2021

Assistant Professor of Entomology

Federal University of Lavras (UFLA)
Departament of Entomology, Lavras, Minas Gerais, Brazil

- **Professor and coordinator of the following subjects** (from August 2019 to November 2021):

1) Medical and Veterinary Entomology (GET-111, 45h) for undergraduate students from the Biology, Agronomy and Veterinary curriculum of UFLA.
2) Methodologies for Scientific Research in Entomology (PEN-536, 45h) for graduated (Master and PhD) students.
3) Introduction to the R software (PEN-530, 30h) for graduated (Master and PhD) students
4) Medical and Veterinary Entomology (PEN-537, 60h) for graduated (Master and PhD) students.
- **Supervision of graduate and undergraduate students**.
- Writing of project proposals and articles for scientific journals.
- **Coordinator of the project:** Biological Control of *Musca domestica* in commercial poultry units. Project funded by Coordination for the Improvement of Higher Education (CAPES), from April 2020 to March 2022 (*for details about the project see section 'Research Projects' below)*
- **Financial and administration management of the project.**
- Sampling and data collection, analysis, and presentation.
- Team member in other projects of the Department.
- Presentations and lectures in the University and other local and national scientific events.
- **Publication of the results in scientific journals of Entomology** (*see section 'Publications'*).

2017 - 2019

Postdoctoral Researcher and Volunteer Professor in Medical Entomology

University of São Paulo (USP)
Department of Parasitology, São Paulo, Brazil

- **Postdoctoral researcher, head of the project**: Artificial infection of *Wolbachia* in *Aedes aegypti*. Project funded by CAPES, from November 2017 to January 2019. *For details about the project see section 'Research Projects' below*
- **Invited volunteer professor** of the course "Mosquito Vector Control Methods – ESP5113" for graduated (Master) students from the Biology curriculum of USP.
- **Field work** for insect fauna survey in the native area of the Butantan Institute (partner of the project) and for reporting the presence/absence of dengue and yellow fever mosquito vectors.
- **Lab work with** analytical chemistry, molecular biology techniques (DNA isolation, primer design, PCR, gel electrophoresis, qPCR), artificial infection of *Ae. aegypti* mosquitoes with Zika virus, elimination and transinfection of the bacteria *Wolbachia* in *Ae aegypti* and *Cx quinquefasciatus* mosquitoes, mass rearing production of mosquitoes.
- Writing and presentation of project proposals and reports to governmental organizations.
- Financial and administration management of the project.
- Sampling and data collection, analysis, and presentation.
- **Supervision of graduate and undergraduate students** from USP and Butantan Institute.
- Team member in other projects from the Institute.
- Presentation of lectures at USP and at Butantan Institute.

2011 - 2017

Postdoctoral Researcher and Volunteer Professor in Agricultural Entomology/ Acarology

University of Amsterdam (UvA), Amsterdam, The Netherlands

- **Postdoctoral researcher, head of the project**: When plant resistance breeding and biocontrol collide: Reducing the negative effects of phytotoxins on biological control organisms via their herbivorous prey to optimize integrated pest management. Project funded

by Netherlands Organisation for Scientific Research (NOW), The Netherlands, from March 2015 to December 2017. *For details about the projects see section 'Research Projects' below.*
- **Postdoctoral researcher in the international joint project:** Elucidating the ecological consequences of plant defence suppression. Project funded by National Council for Scientific and Technological Development (CNPq), Brazil, from July 2013 to February 2015.

- **PhD Researcher**, project funded by CAPES/ NUFFIC, from May 2011 to June 2012.
- **Invited volunteer professor** of the course "Ecophysiology" for undergraduate students from the Biology curriculum of UvA.
- Management of mass rearing production of insects (thrips, white flies, aphids) and mites (herbivorous and carnivorous).
- **Laboratory and green house experiments** with insects and mites on wild type and genetically modified tomato, bean, cucumber, and pepper plants.
- **Lab work**: analytical chemistry, molecular biology techniques (PCR, qPCR, RNA-seq) and analysis of plant secondary compounds (GC and LC-MS/MS).
- Writing and presentation of project proposals and reports to governmental and private Dutch and Brazilian organizations.
- Seek for new partners and collaborators in Brazil and in the Netherlands.
- Team member in other projects from the Institute.
- Sampling and data collection, analysis, and presentation.
- **Supervision of graduate and undergraduate students** from the faculty.
- Presentation of lectures at the Institute, local conferences, symposia, and international congresses.
- Member of the Faculty PhD Council.
- **Publication of the results in scientific journals of high impact factors in the field of Entomology** (*see section 'Publications'*).
- Lectures at the University, local conferences, symposia, and national and international congresses (cities from Brazil, The Netherlands, Austria, Spain, Lithuania, France, *see next section*).

2007 – 2015

Master, PhD, Postdoctoral Researcher and Volunteer Professor in Agricultural Entomology/ Acarology

University of Viçosa (UFV), Viçosa, Minas Gerais, Brazil

- **Postdoctoral researcher in the international joint project**: Elucidating the ecological consequences of plant defence suppression. Project funded by National Council for Scientific and Technological Development (CNPq), Brazil, from July 2013 to February 2015. *For details about the projects see section 'Research Projects' below.*
- **Research leader of the PhD project:** *Tetranychus evansi* evades plant defence. Project funded by FAPEMIG, from August 2009 to June 2013.
- **Research leader of the Master project:** Behavioural and chemical factors involved in the choice of *Solanum lycopersicon* genotypes by *Tuta absoluta* (Lepidoptera: Gelechiidae) females, from August 2007 to July 2009. *For details about the projects see section 'Research Projects' below*
- **Invited volunteer professor** of the courses "General Entomology" and "Agricultural Acarology" for undergraduate students from the Biology and Agronomy curriculum of UFV.
- Management of mass rearing production of insects (moths, thrips, white flies, aphids) and mites (herbivorous and carnivorous).
- **Laboratory, green house and field experiments** with insects and mites on resistant and susceptible tomato genotypes.
- **Lab work:** analytical chemistry, analysis of plant volatiles (headspace, electroantennography and GC-MS/MS), study of insect behaviour (wind tunnel, Y-olfactometer), molecular biology techniques (PCR, qPCR), analysis of plant secondary compounds (UV-spectrophotometer and Two-dimensional gel electrophoresis).
- Writing and presentation of project proposals and reports.
- Team member in other projects from the Institute.
- Sampling and data collection, analysis, and presentation.
- **Supervision of graduate and undergraduate students**
- Lectures at the University, local conferences, symposia, and national and international congresses.
- **Publication of the results in scientific journals** (*see section 'Publications'*).

2007

Internship in Medical Entomology

Federal University of Minas Gerais (UFMG), Belo Horizonte, Minas Gerais, Brazil

- **Team member of the research project**: New techniques for artificial feeding of mosquitoes.
- Lab work: Management and mass rearing production of the mosquitoes *Aedes aegypti* and *Aedes* albopictus; bioassays using the artificial feeding system to rear and infect adult mosquitoes with viruses.

2006 - 2007

High School Biology Teacher

Dom Cabral School, Belo Horizonte, Minas Gerais, Brazil

- Teacher of Biology for elementary and high school students.

2005

Internship in Medical Entomology

Oswaldo Cruz Foundation/ René Rachou Research Center (FIOCRUZ), Belo Horizonte, Minas Gerais, Brazil

- **Team member of the research project**: Population genetics and vector competence of *Aedes aegypti* to Dengue virus: mapping of the Brazilian region.
- Dissection, identification, management and mass rearing production of the mosquitoes *Aedes aegypti, Aedes albopictus Culex quinquefasciatus.*

2004 - 2005

Internship in Solid and Organic Waste Management

Solid Waste Treatment Center, Belo Horizonte, Minas Gerais, Brazil

- **Member of the team** for management of solid and organic waste.
- **Field work:** reforestation of the eroded area after solid waste landing; monitoring the new vegetation formed in the area; monitoring the process of natural composting of the organic waste; insect fauna survey for reporting the presence/absence of insect vectors in the area.
- **Lab work:** analyses of the soil and organic compound by checking physical (temperature, humidity, colour, smell), chemical (nitrogen and carbon content) and biological (insects and microorganisms) characteristics of the composting.
- Sampling and data collection, analysis, and presentation of technical reports.
- Supervise visitors and students from elementary and high schools during the visits.

2002 - 2003

Internship in Medical Entomology

National Health Foundation (FUNASA), Belo Horizonte, Minas Gerais, Brazil

- **Team member of the research project**: Biological characteristics, molecular aspects and **entomotoxic** activities of *Bacillus thuringiensis* BERLINGER 1915, serovars *Oswaldo cruzi* H-38 *and brasiliensis* H-39.
- **Lab work:** bacteria culture media preparation, exposition of *L. longipalpis* larvae to spores and suspended crystals of *Bacillus thuringiensis*, taxonomic identification of the sand flies collected in the field and management of mass rearing production of the sand flies *Lutzomya longipalpis.*
- **Field work**: sampling of sand flies in the field.

Research projects

2021 - Present Mitigation of Lychee Erinose mite

Project description: The primary purpose of this agreement is to improve the management of the Lychee Erinose Mite (LEM) (*Aceria litchii*) by increasing our understanding of its interactions with the lychee plants (Litchi chinensis) and the role of natural enemies in the system. LEM is a prioritized quarantine pest in the continental United States of America and other territories. It is the main pest of lychee in Asia, Australia, and Brazil, causing yield reductions of 70-80% and approximately 20% increase in production costs. It was found in a commercial lychee orchard on Pine Island, Florida in February 2018. Most recently, LEM was detected in 11 Florida counties, including Miami-Dade, where approximately 70% of Florida's commercial production is concentrated. FDACS established a quarantine prohibiting the movement of lychee fruit or plant parts (trees, leaves or stems) out of Lee County, and implemented an eradication program targeting this pest. The project will focus on identifying the different types of lychee shoots, monitor their occurrence and their seasonality in the most popular commercial varieties, which will define critical periods for effective LEM control. The project will also explore the role of substances injected by the mite into the leaves that cause the erinea formation, and of its successful establishment on the host. This information will be critical to design strategies to disrupt the LEM-Lychee interactions. Another focus of the project will be to evaluate the impact of local natural enemies on LEM and whether they could be utilized to manage the pest. The LEM management program developed through this agreement will be shared through an outreach effort with the involvement of state extension agents and growers.

Members of the project: **Livia Maria Silva Ataide**; Alexandra Revynthi (coordinator); Daniel Carrillo; Nurhayat Tabanca; Ronald Ochoa; Marcello De Giosa; Project funded by: United States Department of Agriculture-USDA

2021 - Present Mitigation of Acarine Pests of Hemp

Project description: The goal of this project is to identify emerging mite pests of hemp in Florida and mitigate them using biorational pesticides and predatory mites. To our knowledge, there are no biorational pesticides and biological control agents available/ registered for mite pests in hemp plants in Florida. Considering that there are several species of predatory mites from the genus *Amblyseius* that are highly polyphagous and known to voraciously feed on a variety of pests including spider mites, gall mites and russet mites, we will carry out our laboratory bioassays to investigate the potential of commercial predators to control mites attacking hemp plants, including *Amblyseius californicus*, *Amblyseius swirskii* and *Amblyseius andersoni*. Colonies of these predators will be established in lab and choice bioassays and life table evaluation will be done for each predatory mite species. The efficacy of biorational pesticides will be tested against different developmental stages of the pests. Biorational pesticides such as, citric acid, rosemary, thyme, sesame, mineral oils will be tested using standard leaf arena bioassays and the two most efficacious biorational pesticides will be tested under greenhouse conditions.

Members of the project: Livia Maria Silva Ataide; Alexandra Revynthi (Coordinator); Daniel Carrillo; Maria Canon. Project funded by: United States Department of Agriculture-USDA

2020 - Present Biochemical and molecular mechanisms of interaction between predatory mites, phytophagous mites, and host plants, with emphasis on citrus and coffee

Project description: The Brazilian citrus industry, which is the biggest in the world, has stood out for promoting socioeconomic growth in the country. Brazil is also the largest coffee producer in the world and occupies the second position among the countries that consume the beverage. Some mites of the genus *Brevipalpus* (Acari: Tenuipalpidae) are economically important because they are vectors of viruses in several cultures, especially CiLV-C (Citrus leprosis virus C), which causes citrus leprosis, and CoRSV (Coffee ringspot virus), which causes the annular leaf spot on coffee plants. For both diseases, control mainly consists of eliminating the vector with the use of acaricides. One of the most significant aspects of plant growth and reproduction is defense against herbivorous arthropods. In response to herbivory, plants emit specific mixtures of volatiles, the so-called HIPVs (herbivore-induced plant volatiles). The objective of this research is to evaluate the biochemical and molecular mechanisms associated with the influence of predatory mites of the Phytoseiidae family on the interaction between vector mites (*Brevipalpus sp.*), their associated viruses (CiLV-C and CoRSV) and host plants, in agroecosystems of citrus and coffee. The results of this study may provide information to further implement management strategies to control mites that vector viruses, reducing the problems caused by the diseases. The project is linked to the PD fellowship of Dr. Marcia Cristina Vitelli Queiroz. The research to be conducted at the Acarology Laboratory of the Biological Institute of São Paulo, Brazil has the collaboration of Dr. Lívia M. S. Ataíde (Department of Nematology and Entomology, University of Florida) and Dr. Maria Augusta Crivelente Horta (CBMEG, Unicamp), Prof. Dr. Junji Takabayashi (Kyoto University, Japan); Professor Dr. Marie-Stéphane Tixier

(CBGP, INRA, Univ. Montpellier, France); Dr. Ronald Ochoa (USDA, ARS, Beltsville, USA and Prof. Nicole van Dam (German Center for Integrative Biodiversity Research - iDiv).

Members of the project: Livia Maria Silva Ataide, Mário Eidi Sato (coordinator), Maria Cristina Vitelli Queiroz, Maria Augusta Crivelente Horta, Junji Takabayashi, Marie-Stéphane Tixier, Ronald Ochoa and Nicole van Dam. Project funded by: São Paulo Research Foundation (FAPESP).

2020 - 2022 Biological Control of Musca domestica in commercial laying poultry units

Project description: In commercial laying poultry farms, the high density of birds and the accumulation of manure serve as an ideal substrate for the development and proliferation of flies, one of the main pests found in aviaries. Among these dipterans, *Musca domestica* stands out as the main pest species in these establishments. Nowadays, biological control has recently received attention in aviaries and consists of the introduction of natural enemies that act as natural controlling agents of a particular insect pest. For example, biological control of flies can be done by stimulating the maintenance and development of a heterogeneous population of predatory and parasitic mites in bird manure. Therefore, biological control is a tool that could contribute to other management strategies aiming to control this insect pest. The use of the biological control over a population requires basic studies that involve biological, ecological, taxonomic, behavioral, nutritional aspects, breeding methods, both of the insect pest and its natural enemies. To implement biological control in aviaries is challenging and this project aims to elucidate gaps in knowledge about the potential predatory mites and parasites of the housefly in their natural environment. At the end of this project, we expect to find efficient biological agents to control larvae and adult houseflies, so that they can be introduced as an alternative and integrated tool within the integrated pest management of the houseflies.

Members of the project: Livia Maria Silva Ataide (Coordinator); Leopoldo Ferreira de Oliveira; Khalid Haddi; Bianca de Paula Valério. Project funded by: CAPES.

2019 - Present Mechanisms of manipulation of Coffea arabica defenses by two arthropod pests and their ecological consequences

Project description: To evade plant defenses, herbivorous arthropods developed manipulation strategies to overcome defenses and to establish themselves in the host. In agricultural settings we often observe the establishment of two or more herbivores on the same plant. For example, in *Coffea arabica* (Rubiaceae) coffee plantations, the red coffee mite *Oligonychus ilicis* (McGregor) (Acari: Tetranychidae) and the leaf miner *Leucoptera coffeella* (Guérin-Méneville) (Lepidoptera: Lyonetiidae) are herbivores usually found in high population densities, causing serious damage to plants. In addition, in coffee plantations we also find natural enemies of great importance for the biological control of herbivorous pests, such as the predatory mite *Euseius concordis* (Chant) (Acari: Phytoseiidae), which, despite being a generalist predator, is quite voracious and plays a role in controlling the population of the red coffee mite. However, the manipulative mechanisms of *O. ilicis* and *L. coffeella* in coffee plants have not been studied yet, as well as the effects of multiple herbivories on the third trophic level. This project will investigate the following questions: (i) which are the mechanisms involved in the manipulation of coffee plant defenses by the red coffee mite and leaf miner? (ii) since herbivores co-occur in coffee plantations, which one is the most likely to arrive first on the plant? and (iii) what are the consequences of multiple herbivory on the predatory mite *E. concordis*? We hope to answer these questions through laboratory behavioral assays and biochemical and molecular techniques. The study of the plant defenses and the behavior of herbivores and their natural enemies in coffee plants will help to better understand the complexity of these multitrophic interaction.

Members of the project: Livia Maria Silva Ataide; Maria Fernanda Gomes Vilalba Penaflor (Coordinator); Fernanda Moreira Andrade; Manuela Junqueira Merlo; Project funded by: CAPES

2017 - 2019 Artificial infection of Wolbachia in Aedes aegypti

Project description: The *Aedes aegypti* mosquito control is a complex public health problem in Brazil, as it is a vector of multiple emerging pathogens, such as the arboviruses that cause dengue, yellow fever, zika, chikungunya, etc. There are several attempts to control this mosquito-vector, but many of them are already obsolete or are still under development. Within the biological vector control paradigm, it was recently discovered that the endosymbiont bacterium *Wolbachia* can affect the transmission of pathogens by mosquitoes. For example, there are *Wolbachia* strains that induce *Ae. aegypti* resistance to dengue, chikungunya, yellow fever and zika virus infections. However, the mosquito *Ae. aegypti* does not naturally have the bacterium, which means that *Wolbachia* strains present in other insects need to be artificially introduced into this vector. The *Wolbachia-Ae. aegypti* interaction is still largely unknown and current studies point to heterogeneity/instability of the bacteria's effects on the mosquito. Most of the studies conducted

so far, use *Ae. aegypti* infested with *Wolbachia* strains derived from *Drosophila*, not from mosquito species. The goal of this project is to transfer a less aggressive *Wolbachia* strain, from *Culex quinquefasciatus*, a closely related species to *Ae. aegypti*, aiming to achieve a greater stability of this bacteria in the mosquito. Hence, we propose a multi-institutional and interdisciplinary project to carry out the transinfection of *Wolbachia* strains from *Cx. quinquefasciatus* to *Ae. aegypti* and assess the stability and consequences of this interaction. In the future, we hope to assess antiviral protection of these mosquitoes against the zika, dengue and chikungunya viruses.

Members of the project: Livia Maria Silva Ataide; Lincoln Rocha Suesdek; Margareth de Lara Capurro (coordinator); Gillyene Bortoloti; Project funded by: CAPES.

2015 - 2018 *When plant resistance breeding and biocontrol collide: Reducing the negative effects of phytotoxins on biological control organisms via their herbivorous prey to optimize integrated pest management*

Project description: Herbivorous pests are responsible for ~30% of the economic damage caused by biological agents in crop breeding: hence there is a strong incentive for designing strategies to control them. Roughly three strategies have been deployed which make use of (1) pesticides; (2) biological control and (3) plant-resistance breeding. Because pesticides often are hazardous to health and environment, there is an increasing demand for solutions obtained via biological control or plant-resistance breeding. However, biological-control companies and plant breeders have traditionally not been taking each other's products much into account. We argue that plant-resistance breeding often will hamper biological control i.e., when plant secondary metabolites that interfere with an herbivorous pest also interfere with its predator/parasitoid. There is remarkably little data on this type of interactions, but our own preliminary data suggest that these effects may be significant. Hence, first we want to assess the extent of the problem. To do so we want to make detailed description of the life histories of spider mites after exposure to common tomato toxins and of the predatory mites eating these spider mites and measure how much of these substances actually reach the predatory mite. Then we want to select predatory-mite strains that can differently cope with harmful substances. These strains we will use to identify genes that mark resistance/susceptibility and these we want to characterize via RNA-interference. Doing so we aim to deliver proof of principle for the applicability of predatory-mite genomic breeding-targets in obtaining biological control agents maximally compatible with plant resistance.

Members of the project: Livia Maria Silva Ataide; Juan M. Alba; Maurice W. Sabelis; Merijn R. Kant (coordinator); Arne Janssen; Thomas van Leeuwen; Tom Groot; Han Rauwerda; Hans Breeuwer; Robert Schuurink; Lin Dong; Project funded by: Netherlands Organisation for Scientific Research-NWO.

2013 - 2015 *Direct and indirect tomato defense affecting predator-prey interactions*

Project description: The study of plant-predator-prey interactions is complex. Plants can affect herbivores by direct and indirect defenses which can also affect natural enemies. Plants indirectly defend themselves against herbivores through the production of volatile compounds that are attractive to the natural enemies of these herbivores. On the other hand, herbivores are capable of perceiving chemical and volatile cues from both attacked and non-attached plants and can also behave differently in the presence of predators, such as escape, change in the oviposition site or production of alarm compounds. All these behaviors are costly, as they lead to a lower investment of time and energy in activities that are important for development, such as food and reproduction. The objective of this work is to study the tritrophic interactions between tomato plants, the herbivorous mites *Tetranychus urticae* and *Tetranychus evansi*, and their predatory mites *Phytoseiulus longipes* and *Phytoseiulus macropilis*. The aim here is to investigate the effect of direct and indirect tomato defense on predatory mites and other arthropods, as well as the behavior of *T. evansi* through predator clues that represent high or low risk of predation. In food webs, each organism behaves differently as a new individual enters the system. Thus, in field conditions, where there are multiple infestations, the study of these interactions is of great importance for the successful implementation of biological control.

Members of the project: Livia Maria Silva Ataide; Marcelo C. Picanco; Madelaine Venzon; Angelo Pallini (coordinator); Arne Janssen; Cleide Dias; Felipe Lemos. Project funded by: FAPEMIG.

2013 - 2017 *Elucidating the ecological consequences of plant defence suppression by Tetranychus evansi*

Project description: Rooted and unable to flee, plants are vulnerable to herbivores even more than animals to their predators. Nevertheless, a plant cannot only defend itself directly against herbivores, but also indirectly by betraying the whereabouts of their herbivorous attackers to foraging natural enemies via distinct odour signals. Natural selection, however, is predicted to promote herbivores that escape from this double 'bear hug' by suppressing plant defences to levels before attack or even to lower levels than in an unattacked plant. We have recently discovered a case of the latter type of defence suppression in the herbivore spider mite *Tetranychus evansi* (Acari:Tetranychidae), an emerging pest on

tomato original from Brazil and currently distributed on countries of Africa, Europe and Asia. We plan to analyze how defence suppression impacts *T. evansi* through competition with other herbivores and through predation by natural enemies in the field. With this population biology and evolutionary ecology approach we expected obtain some insights required for new crop protection strategies to fight against plant-defence-suppressing pests.

Members of the project: Livia Maria Silva Ataide; Eraldo Rodrigues Lima; Madelaine Venzon; Angelo Pallini (coordinator); Maurice W. Sabelis; Arne Janssen; Cleide Dias; Ana Bernardo; Cailum C. W. Freitas; Felipe Lemos; Fabricio Rainha Ribeiro. Project funded by: CNPq.

2010 - 2014 Project CAPES/NUFFIC – UFV/UvA – International Colaboration: Plant-defence suppression by arthropod herbivores

Project description: Plants are not helpless victims when fed upon by herbivores, but rapidly alter their chemistry to reduce herbivory. These so-called induced defences are characterized by the thickening of cells walls and accumulation of toxins and digestive inhibitors, collectively discouraging the herbivore to continue feeding. Research programs aimed at improving plant protection are generally based on this assumption. However, recent evidence suggests that this dogma must be abandoned. We found that two species of herbivorous mites suppress the induced chemistry involved in plant defense. We aim to identify the mechanisms whereby herbivorous mites do so and to elucidate the role of such suppression in the ecology of the herbivore, its competitors, and natural enemies. In this way we hope to set a basis for novel crop protection scenarios. We will focus on the spider mite *Tetranychus evansi*, a novel pest of tomato crops in Europe and Africa, yet an established pest in South America from where it invaded other continents. We discovered that the Brazilian biotype of *T. evansi*, reminiscent of some genotypes of the closely related species *T. urticae*, suppress defences of tomato plants, but they do this so strongly that infested plants become a much more suitable host to suppressing and non-suppressing pest species alike. We propose to elucidate mechanisms of suppression of plant defence with functional genomics of tomato and *T. evansi*. This will provide novel and unconventional insights into how to engineer tomatoes and the associated community of predatory and herbivorous arthropods to control this upcoming pest. Moreover, this knowledge will fundamentally change our views on the arms race between herbivores and plants

Members of the project: Livia Maria Silva Ataide; Felipe Lemos; Angelo Pallini (coordinator); Maurice W. Sabelis; Merijn R. Kant; Arne Janssen; Cleide Dias. Project funded by: CAPES.

2009 - 2013 Tetranychus evansi evades plant defences

Project description: Spider mites are known to induce or suppress plant defences. For instance, most strains of Tetranychus urticae induce plant defences regulated by jasmonic acid (JA) and salicylic acid (SA) pathways and this response has been correlated with a reduction in their reproductive performance on tomato plants. In contrast, the red spider mite *Tetranychus evansi* suppresses the JA and SA defences and both spider mite species were found to perform much better on tomato leaves that were previously attacked by the suppressor mite. In this project I have investigated whether *T. evansi* and *T. urticae* affect induced tomato plant defences locally or systemically. The results show that *T. evansi* seems to manipulate plant defences mainly on its feeding site, because its oviposition performance was only positively affected at the site of its attack, but not in adjacent tomato leaflets. It suggests that these two strategies together (the spin of its web and the suppression of plant defences by *T. evansi* only at its feeding site) can confer advantages to avoid other herbivores of profiting from the suppression of plant defence. Because natural enemies can be sensitive to compounds produced by the plant as direct plant defences, the natural enemies may benefit from suppression of these defences. Therefore, I also investigated how the induction of JA defences by the spider mite T. urticae and suppression by *T. evansi* can affect their reproductive performance and the performance of their predatory mite, *Phytoseiulus longipes*. In this thesis, I aimed to get a better insight in the costs and benefits of plant defence suppression by *T. evansi* within simple semi-natural communities linking ecology and molecular biology. These two fields of research traditionally work separately in the science. To bring them together can provide novel insights into how to use and breed tomato plants and how to manipulate the natural enemies to favour pest control in agriculture.

Members of the project: Livia Maria Silva Ataide; Madelaine Venzon; Angelo Pallini (coordinator); Arne Janssen. Project funded by: FAPEMIG.

2007 - 2009 Chemical and behavioral factors involved in the choice for different genotypes of Solanum esculentum by Tuta absoluta (Lepidoptera: Gelechiidae) females

Project description: Plants produce volatile chemical compounds that can negatively affect the preference (antixenosis) or the performance (antibiosis) of herbivorous insects. It is thought that these volatile compounds are used as cues by herbivorous insects to determine the suitability of the plant for egg deposition and, hence, offspring performance. Here, we investigated whether volatiles produced by tomato plants play a role in modulating the flight and

oviposition behavior of mated *Tuta absoluta* (Lepidoptera: Gelechiidae) females. The tomato moth, *T. absoluta* is a monophagous insect, considered one of the main pests of tomato in Brazil. Due to the importance of chemoreception in insect communication, this project aims to determine, through behavioral studies involving electrophysiology techniques, wind tunnel olfactometry and chemical identification of plant volatiles, the mechanisms involved in plant choice by *T. absoluta*. This project can benefit breeding programs to obtain plants resistant to this pest.

Members of the project: Livia Maria Silva Ataide; Eraldo Rodrigues Lima (coordinator); Evaldo Ferreira Vilela; Marcelo Coutinho Picanço; Project funded by: CNPq.

2005 - 2005 ***Population genetics and vector competence of Aedes aegypti to Dengue Virus: mapping the Brazilian territory***

Project description: *Aedes aegypti* mosquitoes are the main vectors of dengue viruses to humans. Understanding their biology and interactions with the pathogen are prerequisites for development of dengue transmission control strategies. Mosquito salivary glands are organs involved directly in pathogen transmission to vertebrate hosts. Information on the spatial distribution of gene expression in these organs is expected to assist in the development of novel disease control strategies, including those that entail the release of transgenic mosquitoes with impaired vector competence. Despite the extensive knowledge acquired thus far about mosquito saliva components and their functions, little is known about the spatial specificity of expression of the corresponding genes in the salivary glands. The goal of this project is to isolate salivary glands and investigate genes expression in the salivary glands of adult *Ae. aegypti* females and discuss the application of such knowledge for enhancing efforts to interfere with dengue virus transmission.

Members of the project: Livia Maria Silva Ataide; Paulo Filemon Paolucci Pimenta (Coordinator); Project funded by: CNPq.

2002 - 2003 ***Biological characteristics, molecular aspects and entomotoxicity of Bacillus thuringiensis BERLINGER 1915, serovars oswaldocruzi H-38 e brasiliensis H-39 (Doc. 28)***

Project description: The sand fly *Lutzomyia longipalpis* (Diptera, Psychodidae, Phlebotominae) is the vector of visceral leishmaniasis, causing a significant public health problem in the American Continent. There is no effective control method for sand fly immature stages due to the limited knowledge of their ecology and breeding sites in nature. The goal of this project is to verify the interaction of Cry toxins from *Bacillus thuringiensis* with the larvae of the *Lu. longipalpis*. Initially, sandflies (adults) will be collected in the field and, after their identification, only females of the *Lu. longipalpis* species will be kept in the laboratory. The larvae will be exposed to different concentrations of spores and suspended crystals of *Bacillus thuringiensis* serovar *israelensis* and *Bacillus sphaericus*. In this project, it will be necessary to improve the mass rearing of sandflies in the laboratory, in addition to cultivating the bacteria and establishing the lethal doses (LD 50) for the tested toxins.

Members of the project: Livia Maria Silva Ataide; Lydston Rodrigues de Carvalho (coordinator); Cleider Rodriques da Silva; Vasco A. C. Azevedo; Marcelo Carvalho Resende; Leon Rabinovitch. Project funded by: CNPq.

Publications in Scientific Journals

1. FERRAZ CS, **ATAIDE LMS**, GONDIM MGC, PALLINI A (2022) Arthropods associated with the lychee erinose mite, *Aceria litchii* (Acari: Eriophyidae) on lychee trees in Minas Gerais, Brazil. *Experimental and Applied Acarology* doi: 10.1007/s10493-022-00762-3. Epub ahead of print. PMID: 36370241.

2. DIAS CR, **ATAIDE LMS**, MEIJER TT, VENZON M, PALLINI A & JANSSEN A (2022) Phytophagous mite performance on intact plants and leaf discs with different defence levels. *Entomologia Experimentalis et Applicata* **170**: 941– 947.

3. **ATAIDE LMS,** RESENDE MC, LOPES SR, CATAPRETA CAA, SIMOES DA, TAVARES KG (2020) Communities of arthropods associated with the composting process of the organic solid waste produced in a landfill in Brazil. *Environmental Monitoring and Assessment* **192**: 492.

4. **ATAIDE LMS**, CLEIDE DIAS, BERNARDUS SCHIMMEL, THIJS VAN ERP, ANGELO PALLINI, MERIJN KANT (2019) Food decisions of an omnivorous thrips are independent from the indirect effects of jasmonate-inducible plant defences on prey quality. *Scientific Reports* **09**: 1727.

5. **ATAIDE LMS*,** SCHIMMEL BCJ*, SCHUURINK RC AND KANT MR (2017) Linking herbivore performance

and behavior with the spatiotemporal dynamics of induction and suppression of tomato defense responses. *Plant Signaling and Behavior* **12**(10): e1370526. *Joint first authorship

6. ARCE CCM, MACHADO RAR, RIBAS NS, CRISTALDO PF, **ATAIDE LMS,** PALLINI A, CARMO FM, FREITAS LG, LIMA E. (2017) Nematode Root Herbivory in Tomato Increases Leaf Defenses and Reduces Leaf Miner Oviposition and Performance. *Journal of Chemical Ecology* **42:** 1-9.

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9. **ATAIDE LMS,** PAPPAS ML, SCHIMMEL BCJ, et al. (2016) Induced plant-defenses suppress herbivore reproduction but also constrain predation of their offspring. *Plant Science* **252**: 300 - 310.

10. KANT MR, JONCKHEERE W, KNEGT B, LEMOS F, LIU J, SCHIMMEL BCJ, VILLARROEL CA, **ATAIDE LMS,** DERMAUW W, GLAS JJ, EGAS M, JANSSEN A, van LEEUWEN T, SCHUURINK RC, SABELIS MW, ALBA JM (2015) Mechanisms and ecological consequences of plant defence induction and suppression in herbivore communities. *Annals of Botany* **115**: 1015 - 1051.

11. ALBA JM, SCHIMMEL, BCJ, GLAS J, **ATAIDE LMS**; PAPPAS ML, VILLARROEL CA, SCHUURINK RC, SABELIS, MW, KANT MR. (2015) Spider mites suppress tomato defenses downstream of jasmonate and salicylate independently of hormonal crosstalk. *New Phytologist* **205**: 828 - 840.

12. ALBENY DS, ROSA CS, **ATAIDE LMS,** KRUGER RF, VILELA EF (2012) Variação da Predação de Larvas de Aedes aegypti por Larvas de Toxorhynchites violaceus (Diptera: Culicidae) de Acordo com Dimensões do Hábitat. *BioAssay* **7**: 1-5.

13. Rosa CS, SIMÕES DA, **ATAIDE LMS,** HORTA MAP, Vilela EF (2011) Susceptibility of Aedes aegypti (Linnaeus) (Diptera: Culicidae) Immature Forms to Ivermectin. *BioAssay* **6**: 1-4.

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15. SIMOES DA, ROSA CS, **ATAIDE LMS**, VILELA EF (2010) Primeiro registro do gênero Toxorhynchites Theobald (Diptera, Culicidae) em Mata Atlântica, Viçosa, Minas Gerais. *Revista Ceres* **57**: 181-184.

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17. CARVALHO LR, **ATAIDE LMS,** SILVA CR, AZEVEDO VAC, RESENDE MC, RABINOVITCH L (2007) Comparison between highly toxic *Bacillus thuringiensis* serovar *israelensis* and *Bacillus sphaericus* strains against *Lutzomyia longipalpis* LUTZ & NEIVA 1912 (Diptera, Psychodidae, Phlebotominae) larvae. *Neotropical Biology and Conservation* **2**: 80-83.

Latest published abstracts in proceedings of conferences

1. REVYNTHI, A.; **ATAÍDE, LÍVIA M. S.**; CRUZ, L.; CANON, M. ; KENDRA, P. E. ; TABANCA, N. ; HAMMOND, J. ; OCHOA, R. ; CARRILLO, D. The lychee erinose mite: Ecology and management. In: 2022 Joint SEB & APS-CD Meeting, 2022. 2022 Joint SEB & APS-CD Meeting: Creating and Renewing Connections.

2. CANON, M.; **ATAIDE, L. M. S.**; OSBORNE, L.; KENDRA, P. E.; REVYNTHI, A. Evaluation of biorational pesticides against acarine pests of hemp (Cannabis sativa). In: 2022 Joint SEB & APS-CD Meeting, 2022, San Juan, Puerto Rico. 2022 Joint SEB & APS-CD Meeting: Creating and Renewing Connections, 2022.

3. **ATAÍDE, LÍVIA M. S.**; CANON, M. A.; TABANCA, N.; KENDRA, P. E.; CARRILLO, D.; REVYNTHI, A. How do phytochemical and morphological lychee plant traits affect the lychee erinose mite Aceria lichii (Acari: Eriophyidae)? In: 2022 ESA, ESC, and ESBC Joint Annual Meeting, 2022, Vancouver. 2022 ESA, ESC, and ESBC Joint Annual Meeting, 2022.

4. **ATAIDE, L. M. S.**; de GIOSA, M. ; CARRILLO, D. ; REVYNTHI, A. Potential natural enemies of the Lychee Erinose Mite (Aceria lichii), an invasive pest of lychee plants in Florida. In: FLORIDA ENTOMOLOGY SOCIETY ANNUAL MEETING, 2022, Gainesville. FLORIDA ENTOMOLOGY SOCIETY ANNUAL MEETING, 2022.

5. REVYNTHI, A. ; **ATAIDE, L. M. S.** ; CANON, M. ; KENDRA, P. E. ; TABANCA, N. ; HAMMOND, J. ; OCHOA, R. ; CARRILLO, D. The lychee erinose mite: pest status in Florida and management. In: FLORIDA ENTOMOLOGY SOCIETY ANNUAL MEETING, 2022, Gainesville. FLORIDA ENTOMOLOGY SOCIETY ANNUAL MEETING, 2022.

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8. VALERIO, B. P. ; BARBARAN, R. Y. F. ; **ATAÍDE, LÍVIA M. S.** ; HADDI, K. Exposição direita e indireta a deltametrina em larvas de Musca domestica L e seu efeito sobre o peso das pupas. In: XXX Congresso de Pós-graduação, 2021, Online. Anais do XXX Congresso de Pós-graduação, 2021.

9. BARBARAN, R. Y. F. ; VALERIO, B. P. ; **ATAÍDE, LÍVIA M. S.** ; QUEIROZ, D. D. L. ; RESENDE, L. F. ; HADDI, K. Suscetibilidade de adultos de duas populações de Musca domestica L. (Diptera: Muscidae) a inseticidas químicos. In: XXX Congresso de Pós-graduação, 2021, Online. Anais do XXX Congresso de Pós-graduação, 2021.

10. VALERIO, B. P. ; BARBARAN, R. Y. F. ; HADDI, K. ; BERNARDI, L. F. O. ; **ATAÍDE, LÍVIA M. S.** Efeito de inseticidas dos grupos químicos piretróide, neonicotinóide e organofosforado em ácaros predadores Macrocheles merdarius (berlese, 1889) (Parasitiformes: Mesostigmata: Macrochelidae). In: VII Simpósio Brasileiro de Acarologia (SIBAC), 2021, Online. Anais do VII Simpósio Brasileiro de Acarologia (SIBAC), 2021.

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12. MOURA, C. ; CARNEIRO, R.A. ; SANTOS, R. ; RODRIGUES, D. ; LIMA, L. ; BASTOS, M. ; BELOTTI, M. ; FERREIRA, G. ; **ATAIDE, L. M. S.** ; DAUN, B. ; TEIXEIRA, K. ; ARGIONA, B. ; ROSA, M. ; CHAGAS, A. ; JESUS, V. ; RICCI, F. ; PUORTO, G. ; INGLEZ, G. ; FONSECA, F. V. Dia Mundial Contra o Mosquito. In: 20ª Reunião Científica Anual do Instituto Butantan, 2018, São Paulo. 20ª Reunião Científica Anual do Instituto Butantan, 2018.

13. **ATAIDE, L. M. S.**; BORTOLOTI, G. ; CAPURRO, M. L. ; SUESDEK, L. R. Artificial Wolbachia infection in Aedes aegypti. In: 20ª Reunião Científica Anual do Instituto Butantan, 2018, São Paulo. 20ª Reunião Científica Anual do Instituto Butantan, 2018.

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16. SCHIMMEL, B. C. ; **ATAIDE, L. M. S.** ; CHAFI, RACHID ; VILLARROEL, CARLOS A. ; SCHUURINK, R. C. ; KANT, M. R. Overcompensation of herbivore reproduction through hypersuppression of plant defenses in response to competition. In: Plant-Herbivore Interaction - Gordon Research Conference, 2017, Ventura. Plant-Herbivore Interaction - Gordon Research Conference, 2017.

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Member of Editorial Board

2017 – Present Journal: PlosOne

Scientific Journal Referee

2016 - Present Journal: Austral Entomology
2015 - Present Journal: Experimental & Applied Acarology (Dordrecht. Online)
2017 - Present Journal: Ecology and Evolution
2017 - Present Journal: PLoS One
2017 - Present Journal: Archives of Phytopathology and Plant Protection
2017 - Present Journal: Neotropical Entomolgy
2020 - Present Journal: Revista Acta Biológica Colombiana
2020 - Present Journal: PLOS Neglected Tropical Diseases
2021 - Present Journal: Crop Science
2021 - Present Journal: Frontiers in Ecology and Evolution
2022 - Present Journal: Entomological Communications
2022 - Present Journal: Waste and Biomass Valorization

Participation in Course Completion Works Examination Boards

Master's Dissertation

1. PENAFLOR, M. F. G. V.; FADINI, M. A. M.; **ATAIDE, L. M. S.** Participation In Board of Bruna Corrêa da Silva. 2022. Dissertation (Master's in Agronomy/Entomology) - UFLA.

2. **ATAIDE, L. M. S.**; AZEVEDO, L. H.; CARVALHO, S. M. Participation In Board of Bianca de Paula Valério. 2022. Dissertation (Master's in Agronomy/Entomology) - UFLA.

3. ALVES, D. S.; CARVALHO, G. A.; **ATAIDE, L. M. S**. Participation In Board of Ariane Julia Serafim. 2022. Dissertation (Master's in Agronomy/Entomology) - UFLA.

4. FONSECA, F. G.; **ATAÍDE, LÍVIA M. S.** Participation In Board of BRUNA REGINA DINIZ SOUZA. 2022. Dissertation (Master's in Applied Microbiology) - UFMG.

5. HADDI, K.; **ATAÍDE, L. M. S.**; LIMA, G. D. A. Participation In Board of BIANCA MORAIS DE SOUZA. 2021. Dissertation (Master's in Agronomy/Entomology) - UFLA.

6. PALLINI, A.; **ATAIDE, L. M. S.**; PARREIRA, D. F. Participation In Board of Jose Jahir Morales Murillo. 2021. Dissertation (Master's in Entomology) - UFV.

7. **ATAIDE, LIVIA M.S.**; CARVALHO, G. A.; MARAFELI, P. P.; PIMENTEL, G. C. S. Participation In Board of Nathan Jhon Silva Lopes. 2020. Dissertation (Master's in Agronomy/Entomology) - UFLA.

8. CARVALHO, G. A.; SOUZA, B. H. S.; BIONDI, A.; **ATAIDE, L. M. S.** Participation In Board of Luciano Bastos Moreira. 2020. Dissertation (Master's in Agronomy/Entomology) - UFLA.

Ph.D. Thesis

1. BARCANTE, J. M. P.; FERREIRA, S. A.; MATA, A. S.; BRUHN, F. R. P.; FERREIRA, R. A.; **ATAIDE, L. M. S.** Participation In Board of Thiago Pasqua Narciso. 2019. Thesis (Ph.D. in Veterinary Science) - UFLA.

2. **ATAIDE, L. M. S.**; VENZON, M.; PEREIRA, E. J. G.; BATISTA, F. C.; PALLINI, A. Participation In Board of Cleide Rosa Dias. 2017. Thesis (Ph.D. in Agronomy/Entomology) - UFV.

Ms. and Ph.D. Qualification

1. PENAFLOR, M. F. G. V.; OLIVEIRA, L. F.; **ATAIDE, L. M. S.**; SILVA, D. B. Participation In Board of BRUNA CORRÊA DA SILVA. 2021. Qualification Exam (M.S Student in Agronomy/Entomology) - UFLA.

2. CARVALHO, G. A.; SOUZA, B. H. S.; **ATAIDE, L. M. S.** Participation In Board of ARIANE JULIA SERAFIM. 2021. Qualification Exam (M.S. Student in Agronomy/Entomology) - UFLA.

3. SOUZA, B. H. S.; **ATAIDE, L. M. S.**; MARUCCI, R. C.; HADDI, K.; SOUZA, B. Participation In Board of DANIEL DE CARVALHO MELO COSTA. 2021. Qualification Exam (Ph.D. Student in Agronomy/Entomology) - UFLA.

4. BONETTI FILHO, R. Z.; MORALES, M. N.; **ATAIDE, L. M. S.**; HADDI, K. Participation In Board of JESSICA JOSEFA SANCHES. 2021. Qualification Exam (Ph.D. Student in Agronomy/Entomology) - UFLA.

5. LIMA, E. R.; ARCE, C. C. M.; CRISTALDO, P. F.; PENAFLOR, M. F. G. V.; **ATAIDE, L. M. S.** Participation In Board of Natalia de Souza Ribas. 2021. Qualification Exam (Ph.D. Student in Entomology) - UFV.

6. LOUZADA, J. N. C.; LASMAR, C. J.; SILVEIRA, L. C. P.; **ATAIDE, L. M. S.** Participation In Board of Taís Helena de Araujo Rodrigues. 2021. Qualification Exam (Ph.D. Student in Agronomy/Entomology) - UFLA.

7. **ATAÍDE, L. M. S.**; CARVALHO, G. A.; FARIA, L. B. Participation In Board of BIANCA DE PAULA VALÉRIO.

2021. Qualification Exam (M.S. Student in Agronomy/Entomology) - UFLA.

8. BARCANTE, J. M. P.; CURI, N. H. A.; **ATAIDE, L. M. S.**; REGO, F. D. Participation In Board of Leandro Mata da Rocha Melo. 2020. Qualification Exam (M.S. Student in Health Sciences) - UFLA.

9. **ATAIDE, L. M. S.**; CARVALHO, G. A.; HERMES, M. G.; GREGORIN, R. Participation In Board of Wellington Donizet Ferreira. 2019. Qualification Exam (Ph.D. Student Agronomy/Entomology) - UFLA.

10. **ATAIDE, L. M. S.**; LOUZADA, J. N. C.; RIBAS, C. R.; OLIVEIRA, L. F. Participation In Board of Jonas José Mendes Aguiar. 2019. Qualification Exam (Ph.D. Student in Agronomy/Entomology) - UFLA.

11. CARVALHO, G. A.; **ATAIDE, L. M. S.**; ALVES, D. S.; BIONDI, A. Participation In Board of Karolina Gomes de Figueiredo. 2019. Qualification Exam (M.S. Student in Agronomy/Entomology) - UFLA.

12. SOUZA, B. H. S.; CARVALHO, G. A.; **ATAÍDE, L. M. S.** Participation In Board of Muller César Alves. 2019. Qualification Exam (M.S. Student in Agronomy/Entomology) - UFLA.

13. PENAFLOR, M. F. G. V.; HADDI, K.; **ATAÍDE, L. M. S.** Participation In Board of Bianca Morais de Souza. 2019. Qualification Exam (M.S. Student in Agronomy/Entomology) - UFLA.

Participations in Judging Commissions' Boards

1. BONETTI FILHO, R. Z.; **ATAIDE, L. M. S.**; HADDI, K.; SOUZA, B. H. S.; CARVALHO, G. A.; MOINO JUNIOR, A. Selection of Candidates for the Graduate Program in Entomology – Selective Process of 2021-1. 2021. UFLA.

2. MARUCCI, R. C.; HADDI, K.; **ATAIDE, L. M. S.**; PENAFLOR, M. F. G. V.; BONETTI FILHO, R. Z. Selection of Candidates for the Graduate Program in Entomology – Selective Process of 2021-2. 2021. UFLA.

3. **ATAIDE, L. M. S.** Selection panel for the XXX Entomology Symposium of UFLA. 2021. UFLA.

4. **ATAIDE, L. M. S.** Selection panel for the XXXIII Scientific Initiation Symposium of UFLA - CIUFLA. 2020. UFLA.

5. BONETTI FILHO, R. Z.; MOINO JUNIOR, A.; CARVALHO, G. A.; **ATAIDE, L. M. S.** Selection of Candidates for the Graduate Program in Entomology – Selective Process of 2020. UFLA.

6. **ATAIDE, L. M. S.** Selection panel for the XXIX Entomology Symposium of UFLA. 2020. UFLA.

7. **ATAIDE, L. M. S.** Selection panel for the XXXII Scientific Initiation Symposium of UFLA. 2019. UFLA.

8. **ATAIDE, L. M. S.** Selection panel for the 26th Technological and Scientific Initiation Symposium of USP. 2018. USP.

9. **ATAIDE, L. M. S.** Selection panel for the III Entomology Symposium of Rio de Janeiro. 2015. Federal University of Rio de Janeiro (UFRJ).

10. SOUZA, O.; LIMA, E. R.; SERRAO, J. E.; **ATAIDE, L. M. S.** Selection of Candidates for the Graduate Program in Entomology – Selective Process of 2014. UFV.

11. SOUZA, O.; LIMA, E. R.; SERRAO, J. E.; **ATAIDE, L. M. S.** Selection of Candidates for the Graduate Program in Entomology – Selective Process of 2014. UFV.

12. **ATAIDE, L. M. S.** Selection panel for the Entomology Symposium of UFV. 2013. UFV.

Lectures and Oral presentation in events

1. ATAIDE, L. M. S. How do phytochemical and morphological lychee plant traits affect the lychee erinose mite *Aceria lichii* (Acari: Eriophyidae)? 2022. (2022 ESA, ESC, and ESBC Joint Annual Meeting, Canada).

2. ATAIDE, L. M. S. Why is important to control mosquitoes and flies in our society. 2022. (Online event: Insects in the city of Lavras, Brazil).

3. ATAIDE, L. M. S. Plant responses to spider mite attack. 2022. (I Workshop in Agricultural Acarology, United States).

4. ATAIDE, L. M. S. Potential Natural Enemies of the Lychee Erinose Mite (*Aceria litchii*). 2022. (I Workshop in Agricultural Acarology, United States).

5. ATAIDE, L. M. S. Potential natural enemies of the Lychee Erinose Mite (Aceria lichii), an invasive pest of lychee plants in Florida. 2022. (Florida Entomology Society Annual Meeting, United States).

6. ATAIDE, L. M. S. *Wolbachia* and transgenic mosquitoes: new technologies to control the mosquito *Aedes aegypti*. 2021. (PEX - Aedes aegypti Control Excellence Program (online), Brazil).

7. ATAIDE, L. M. S. New technologies to control the mosquitoes. 2021. (Center for Studies in Parasitology-UFLA, Brazil).

8. ATAÍDE, LÍVIA M. S. Spider mites as a system model to study chemical ecology. 2020. (I Cycle of Lectures on Applied Acarology and Plant Protection (Online)-UFLA, Brazil).

9. ATAIDE, L. M. S. Multidisciplinary research in Entomology. 2019. (Center for Studies in Entomology-UFLA, Brazil).

10. ATAIDE, L. M. S. Relationship between environmental disasters and the transmission of infectious diseases. 2019. (I Integrated Conference on Health and Environment, Brazil).

11. ATAIDE, L. M. S. How induction and suppression of plant defenses operates against target and non-target organisms? 2019 (II International Workshop on Chemical Ecology of Multitrophic Interactions, Brazil).

12. ATAIDE, L. M. S. Integrated Pest Management of the mosquito *Aedes aegypti*. 2019. (Center of Studies in One Health, Brazil).

13. ATAIDE, L. M. S. Plant defenses affect target and non-target mites. 2016. (P(h)d event - From institute to community, The Netherlands).

14. ATAIDE, L. M. S. Jasmonate defenses operate against target and non-target mites. 2016. (8th Symposium of the EURopean Association of Acarologists, Spain).

15. ATAIDE, L. M. S. Jasmonate defenses have negative effects on target and non-target organisms. 2015. (10th workshop on plant-insect interactions, The Netherlands).

16. ATAIDE, L. M. S. Evolutionary arms race between plants and phytophagous mites. 2013. (IV Brazilian Symposium on Acarology, Brazil).

17. ATAIDE, L. M. S. Herbivore-induced or suppressed plant jasmonate-defenses affect the foraging strategy of a predator. 2012. (International Society of Chemical Ecology - 28th Annual Meeting, Lithuania).

18. ATAIDE, L. M. S. Suppression of plant defenses by *Tetranychus evansi* can backfire during competition with other mite species. 2012. (7th Symposium of the EURopean Association of Acarologists, Austria).

19. ATAIDE, L. M. S. Flight behavior and oviposition of *Tuta absoluta* on susceptible and resistant genotypes of *Solanum lycopersicum*. 2009. (VI Brazilian Meeting of Chemical Ecology, Brazil).

20. ATAIDE, L. M. S. Phytotoxicity evaluation of the organic compost using tomato plants (Lycopersicon esculentum Mill.). 2005. (23rd Brazilian Congress of Sanitary and Environmental Engineering, Brazil).

Academic Advisory – current

Ph.D. thesis

1. Marcello De Giosa. It’s all about the spit: how eriophyoid mite saliva affects their host plants. Begin: 2022. Thesis

(PhD in Entomology and Nematology) - University of Florida, Project funded by USDA. **Co-advisor: Livia Maria Silva Ataide.**

2. Fernanda Moreira Andrade. Manipulation of *Coffea arabica* defenses by two arthropod pests and its ecological consequences. Begin: 2019. Thesis (PhD in Applied Ecology) - UFLA, Project funded by CNPq. **Co-advisor: Livia Maria Silva Ataide.**

Academic Advisory – concluded

Ph.D. thesis

1. Jie Liu. 2016-2017. Thesis (PhD in Biology) – UvA. Project funded by Netherlands Organisation for Scientific Research (MWO). **Co-advisor: Livia Maria Silva Ataide.**

Master's Thesis

1. Bianca de Paula Valério. 2020-2022. Dissertation (Master's in Entomology) – UFLA. Project funded by CAPES. **Primary supervisor: Livia Maria Silva Ataide.**

2. Laísa Silva de Almeida. 2018-2020. Dissertation (Master's in Parasitology) – USP. Project funded by CAPES. **Co-advisor: Livia Maria Silva Ataide.**

Scientific Initiation

1. Gillyene Bortoloti. 2018. Scientific Initiation – University 9 of Jully. **Primary supervisor: Livia Maria Silva Ataide.**

2. Thijs van Erp. 2016. Scientific Initiation - UvA. **Primary supervisor: Livia Maria Silva Ataide.**

3. Pauliana Aparecida da Silva. 2014-2015. Scientific Initiation – UFV. Project funded by Minas Gerais State Agency for Research and Development (FAPEMIG). **Primary supervisor: Livia Maria Silva Ataide.**

4. Fernando Willian Neves. 2008. Scientific Initiation - UFV. **Primary supervisor: Livia Maria Silva Ataide.**

5. Gabriel Xavier Ferreira. 2008. Scientific Initiation - UFV. **Primary supervisor: Livia Maria Silva Ataide.**

6. André Campos Rosado. 2007. Scientific Initiation - UFV. **Primary supervisor: Livia Maria Silva Ataide.**

7. Ingrity Josiara de Paula. 2021. Scientific Initiation - UFV. **Co-advisor: Livia Maria Silva Ataide.**

Awards and interviews

- *Globoplay website*: Entomologist explains the reason for the higher incidence of insects in spring. 2021. (Radio or TV Program/Interview). https://globoplay.globo.com/v/9986383/?s=0s

- *Globoplay website*: How to control mosquitoes during the summer? 2020. (Radio or TV Program/Interview). https://globoplay.globo.com/v/8250622/

- *Amsterdam Science Magazine*: “Specialist herbivore shows who is boss”, 2018. (Extension Publication).

- *UFV website*: “Article shows indirect effects of defensive compounds produced by the plant on beneficial predatory mites”, 2016. (Radio or TV Program/Interview). http://www.pos.entomologia.ufv.br/artigo-mostra-efeito-indireto-de-compostos-toxicos-de-defesa-da-planta-sobre-acaro-predador/

- Grant for Scientists from Developing Countries, International Society of Chemical Ecology, 2012.

- Student Travel Award, International Society of Chemical Ecology, 2012.

Organization of Events

- Organization of I Workshop in Agricultural Acarology. 2022. (Local event, Homestead, UF).

- Coordinator of the I Workshop in Medical and Veterinary Entomology (Online). 2021. (Local event, Lavras, UFLA).

- Organization of I Cycle of Lectures on Applied Acarology and Plant Protection (Online). 2020. (Local event, Lavras, UFLA).

Extension

- *World Mosquito Day* at the Butantan Institute, 2018 (Brazil).

- *Knowledge on Agriculture Entomology* at the University of Viçosa, 2010 (Brazil).

- *Preservation and Conservation of the Environment* at the Solid Waste Treatment Center, 2005 (Brazil).

- *Public Health and Environmental Engineering* at Solid Waste Treatment Center, 2004 (Brazil).

- *Investigation and control of human gastrointestinal parasites in communities lacking basic sanitation in Belo Horizonte* at Methodist University Center Izabela Hendrix, 2003 (Brazil).

References

- Dr. Alexandra Revynthi (UF): (+1) 786-217-9244; arevynthi@ufl.edu
- Dr. Geraldo de Andrade Carvalho (UFLA): (+55)-35-988179756; gacarval@ufla.br
- Dr. Merijn Kant (UvA): (+31)-20-5257793; m.kant@uva.nl
- Dr. Angelo Pallini (UFV): (+55)-31-3899 4010; angelo.pallini@gmail.com