

Ivair Valmorbida

Email: ivairval@iastate.edu; ivairvalmorbida@gmail.com

EDUCATION

Iowa State University , Ames, IA, USA Ph.D. Entomology	Jan 2018 – Expected July 2021 GPA: 3.82/4.0
Federal University of Santa Maria , Santa Maria, RS, Brazil M.S. Agronomy (<i>Entomology emphasis</i>)	Graduated: Nov 2017 GPA: 3.75/4.0
Federal University of Santa Maria , Santa Maria, RS, Brazil B.S. Agronomy (<i>Crop protection emphasis</i>)	Graduated: Jan 2016 GPA: 8.3/10
Iowa State University , Ames, IA, USA Study abroad, Science Without Borders (<i>Entomology emphasis</i>)	June 2014 - Aug 2015 GPA: 3.88/4.0
Federal University of Santa Catarina , Camboriú, SC, Brazil 2-year Agriculture technician course. Total hours: 2,328	Graduated: Dec 2006

ENTOMOLOGY RESEARCH

Graduate Research Assistant, *Iowa State University*, Ames, IA Jan 2018 - Present
Identification of mechanisms of resistance and development of molecular markers to assess soybean aphid resistance to pyrethroids.

Co-Advised by Drs. Matthew O'Neal and Erin Hodgson

- Evaluated life history traits of susceptible and pyrethroid resistant aphids.
- Developed molecular markers to assess resistant aphids in the field.
- Determined lethal and sublethal effects of pyrethroids on soybean aphid biotypes.

Graduate Research Assistant, *Federal University of Santa Maria* Mar 2016 - Nov 2017
Melolonthidae community in cultivated and natural grasslands areas of the Brazilian Pampa biome and population genetic structure of *Diloboderus abderus* in the Southern Cone.

Co-Advised by Drs. Jerson Carús Guedes and Jonas Arnemann

- Identified Melolonthidae specimens occurring in the Brazilian Pampa biome.
- Reared Melolonthidae larvae to adult stage.
- Extracted DNA, performed PCR and data analysis using mtDNA to study population genetics.

PUBLICATIONS

Peer Reviewed Publications (17 total, 5 as primary author)

1. **Valmorbida, I.**, Hohenstein, J., Coates, B.S., Hodgson, E.W., Bevilacqua, J.B., Koch, R.L., Menger, J. and O'Neal, M.E. Genetic characterization of pyrethroid resistance in the soybean

aphid and validation of a PCR-RFLP marker to help predict control failure in the field. *Insect Biochemistry and Molecular Biology*. In preparation

2. Perini, C.R., Sosa, V.I., Koda, V.E., Silva, H., Risso, A.A., Vasconcelos, W.N.F., Gonçalves, C.F., Ugalde, G.A., Machado, D.N., Belivaqua, C., Ardisson-Araújo, D.M.P., Maebe, K., Smagghe, G., **Valmorbida, I.** and Guedes, J.C. Genetic variability of two loopers in the Southern Cone of America and evidences of a species in recent expansion in the American continent. *Agricultural and Forest Entomology*. 2021
3. **Valmorbida, I.** Muraro, D.S., Hodgson E. and O’Neal, M.E. Soybean aphid (Hemiptera: Aphididae) response to lambda-cyhalothrin varies with its virulence status to aphid-resistant soybean. *Pest Management Science*. 2020.
4. Muraro, D.S., Stacke, R.F., Cossa, G.E., Godoy, D., Garlet, C., **Valmorbida, I.**, Silva, O.A., O’Neal, M.E. and Bernardi, O. Performance of seed treatment applied on Bt and non-Bt maize against fall armyworm, *Spodoptera frugiperda* (Lepidoptera:Noctuidae). *Environmental Entomology*. 2020.
5. Pozebon, H., Marques, R.P., Padilha, G., O’Neal, M.E, **Valmorbida, I.**, Bevilacqua, J.G., Tay, W.T. and Arnemann, J.A. Arthropod invasions *versus* soybean production in Brazil: a review. *Journal of Economic Entomology*. 2020.
6. Nascimento, D., Costa, E.C., Guedes, J.V.C., Barbosa, L.R., Martínez, G., Mayorga, S.I., Ramos, S.O., Branco, M.R., Garcia, A., Vanegas-Rico, J.M., Jiménez-Quiroz, E., Laudonia, S., Novoselsky, T., Hodel, D.R., Arakelian, G., Silva, H., Perini, C.R., **Valmorbida, I.** Ugalde, G.A. and Arnemann, J.A. One maternal lineage leads the expansion of *Thaumastocoris peregrinus* (Hemiptera: Thaumastocoridae) in the New and Old Worlds. *Scientific Reports*. 2020.
7. Perini, C.R., Arnemann, J.A., Cavallin, L., Guedes, G., Marques, R. P., **Valmorbida, I.**, Silva, K., Feltrin, N. M., Puntel, L., Froehlich, R., Guedes, J.V.C. Challenges in *Chrysodeixis includens* management with chemical insecticides trigger to high control costs in Brazil. *Australian Journal of Crop Science*. 2019.
8. **Valmorbida, I.**, Arnemann, J.A., Cherman, M.A., Bevilacqua, C.B., Perini, C.R., Ugalde, G.A. and Guedes, J.V.C. Phylogeography approach of *Diloboderus abderus* (Coleoptera: Melolonthidae) in the Southern Cone of America. *Neotropical Entomology*. 2019.
9. **Valmorbida, I.**, Cherman, M.A., Jahn, D.S. and Guedes, J.V.C. Abundance and diversity in the Melolonthidae community in cultivated and natural grassland areas of the Brazilian Pampa. *Environmental Entomology*. 2019.
10. **Valmorbida, I.**, Cherman, M.A., Perini, C.R., de Arruda Cavallin, L. and Guedes, J.V.C. Population analysis of white grubs (Coleoptera: Melolonthidae) throughout the Brazilian Pampa biome. *Revista Brasileira de Entomologia*. 2018.

11. Manoela, B. Arnemann, J.A., Bevilacqua, C.B., **Valmorbida, I.**, Costa, V.A., Ugalde, G.A., Gomez, R.V.S., Jahn, D.S. and Guedes, J. V. C. Occurrence of *Syntomopus parisii* (Hymenoptera: Pteromalidae) parasitizing *Melanagromyza sojae* (Diptera: Agromyzidae) in Brazil and Paraguay. *Genetics and Molecular Research*. 2018.
12. Dalazen, G., Bigolin, M., **Valmorbida, I.**, Stacke, R.F. and Cagliari, D. Faunistic analysis of pest insects and their natural enemies associated with hairy fleabane in soybean crop. *Pesquisa Agropecuária Tropical*. 2017.
13. Palma, J., **Valmorbida, I.**, Da Costa, I.F.D., and Guedes, J.V.C. Comparative analysis of protocols for DNA extraction from soybean caterpillars. *Genetics and Molecular Research*. 2016.
14. Perini, Clérison R., Arnemann, J.A., Melo, A.A., Pes, M.P., Valmorbida, I., Beche, M. and Guedes, J.V.C. How to control *Helicoverpa armigera* on soybean in Brazil? What we have learned since its detection. *African Journal of Agricultural Research*. 2016.
15. Salgado-Neto, G., **Valmorbida, I.**, Guedes, J.V.C. and Blume, E. First report of the occurrence of *Ophiocordyceps melolonthae* (Ascomycota: Hypocreales: Ophiocordycipitaceae) in larvae of *Diloboderus abderus* Sturm (Coleoptera: Melolonthidae) in Brazil. *Biota Neotropica*. 2015.
16. Palma, J., Rodrigues, R.B., **Valmorbida, I.**, Guedes, J.V.C. and Costa, E.C. Record of *Chinavia erythrorocnemis* (Berg, 1878) (Hemiptera: Pentatomidae) in easter lily in Rio Grande do Sul, Brazil. *Entomotropica*. 2015.
17. Cherman, M.A., Morón, M.A., Dal Prá, E., **Valmorbida, I.** and Guedes, J.V.C. Ecological characterization of white grubs (Coleoptera: Melolonthidae) community in cultivated and noncultivated Fields. *Neotropical Entomology*. 2014.

Extension Publications

1. Dean, A., O’Neal, M.E., Hodgson, E., **Valmorbida, I.**, Hohenstein, J. and Coates, B. Building a budget for pest resistance. *Proceedings of the 31st Annual Integrated Crop Management Conference*. Iowa State University, Extension and Outreach. 2019.
2. Guedes, J.V.C., Perini, C.R., Alende, V.P., Curioletti, L.E., Stacke, R. F. and **Valmorbida, I.** Decisão racional. *Cultivar Grandes Culturas*. 2015. (in portuguese)

PRESENTATIONS

Research Presentations

1. **Valmorbida, I.**, Hohenstein, J., Bevilacqua, J., Menger, J., Hodgson, E., Koch, B., Coats, B.S., Coats, O’Neal, M.E. Association of field-evolved knockdown resistance to pyrethroids in soybean aphid and frequency of resistant alleles pre- and post-foliar insecticide application Entomological Society of America - National Meeting. 16 November 2020.

2. **Valmorbida, I.**, Muraro, D., Hodgson, E., and O’Neal, M.E. Lethal and sublethal effects of lambda-cyhalothrin on soybean aphid (Hemiptera: Aphididae). Entomological Society of America - National Meeting. 18 November 2019.
3. **Valmorbida, I.**, Hohenstein, J., Coats, B.S., Hodgson, E., Coats, E., O’Neal, M.E. Monitoring of soybean aphid resistance to lambda-cyhalothrin and identification of mutation in the sodium channel gene associated with insecticide resistance. Entomological Society of America - North Central Branch Meeting. 18 March 2019.
4. **Valmorbida, I.** Population genetics of *Diloboderus abderus* in the Southern Cone of America. XXVII Brazilian Congress and the X Latin American Congress of Entomology. 06 September 2018.

Selected Poster Presentation

1. **Valmorbida, I.**, Guedes, J.V.C., Hickman, F. and Arnemann, J.A. Risco de distribuição de *Aphis glycines* (Matsumura, 1917) (Hemiptera: Aphididae) no Brasil, uma importante praga da soja. In: 31ª Jornada Acadêmica Integrada-UFSM, 2016. Anais Da 31ª Jornada Acadêmica Integrada. 2016. (*in portuguese*)
2. **Valmorbida, I.**, Guedes, J.V.C., Cagliari, D., Palma, J. and Barbieri, M. Comparação de três protocolos de extração de DNA para *Chrysodeixis includens* (Walker 1857) (Lepidoptera: Noctuidae, Plusiinae). In: 28º Jornada Integrada Acadêmica da UFSM, 2013, Santa Maria. Anais da 28º Jornada Integrada Acadêmica da UFSM, 2013. (*in portuguese*)
3. **Valmorbida, I.**, Guedes, J.V.C., Araldi, D.B., Boschetti, M.J., Barbieri, M. and Cherman, M.A. Parasitismo em larvas de *Cyclocephala modesta* BURM. 1855 (Coleoptera: Melolonthidae) por *Ptilodexia* sp. (Diptera: Tachinidae). In: XIII Reunião Brasileira Sobre Pragas de Solo, 2013, Rondonópolis-MT. Anais XIII Reunião Sul Brasileira Sobre Pragas de Solo, 2013. (*in portuguese*)
4. **Valmorbida, I.**, Guedes, J.V.C., Palma, J., Machado, M.R.R., Bigolin, M., Machado, R.T. and Fiorentini, A. Aplicação da geoestatística para análise da distribuição espacial de ácaros fitófagos em soja. In: XVI Simpósio De Ensino, Pesquisa E Extensão-Sepe, 2012, Santa Maria. Anais do XVI Simpósio de Ensino, Pesquisa e Extensão, 2012. (*in portuguese*)
5. **Valmorbida, I.**, Guedes, J.V.C., Cagliari, D., Rodrigues, R.B., Huth, C., Palma, J. and Pimenta, B.D. Danos de adultos e ninfas de *Dichelops melacanthus* (Dallas 1851) (Hemiptera: Pentatomidae) sobre plântulas de milho. In: XV Simpósio de Ensino, Pesquisa e Extensão - SEPE, 2011, Santa Maria, RS. Anais XV Simpósio de Ensino, Pesquisa e Extensão - SEPE, 2011. (*in portuguese*)

TEACHING EXPERIENCE

Teaching Assistant

1. Iowa State University. ENT 376: Entomology and Pest Management Spring 2019 and 2020
 - Course Description: Introduction to entomology and insect-pest management, including life processes, ecology, economics, tactics of population suppression, and ecological backlash.
 - Taught two laboratory sections with weekly lectures, biweekly quizzes, pest identifications, and grading. 27 students in 2019 and 10 students in 2020.

Invited lectures

1. Iowa State University. ENT 571: Insect Ecology. Fall 2020
 - Invited speaker to give a talk related to insect life tables, how to collect data and interpret results from life table analysis.
2. Federal University of Santa Maria. DFS 1023: Applied Entomology. Fall 2015, 2016, 2017
 - Invited speaker to present and assist on IPM lectures of arthropod pests of cotton, corn and soybean.

AWARDS

CAPES - Coordination for the Improvement of Higher Education Personnel

Master's in Science Scholarship (BRL 27,000.00)	Mar 2016 - Nov 2017
Science Without Borders, Iowa State University (\$ 60,000.00)	Jun 2014 - Aug 2015
Tutorial Education Program - Agronomy (BRL 12,700.00)	May 2011- Apr 2014

CNPq - National Council for Scientific and Technological Development

Undergraduate Research - Scientific initiation (BRL 2,880.00)	Aug 2010 - Apr 2011
---	---------------------

Professional Society Awards

1. Entomological Society of America
 - Entomological Society of America National Meeting 2020
- Ph.D. Student Presentation Competition, 2nd place: PBT, Insecticide Resistance and Toxicology

RELEVANT EXPERIENCE

Intern, Soybean Research Lab, Iowa State University, Ames, IA, USA May 2015 - Aug 2015

- Collaborated on field and laboratory research related to the biology, ecology and management of insect pests of soybean and the impact of pollinators on soybean yield.

Intern, Agrum-Agrotecnologias Integradas, Santa Maria, RS, Brazil March 2014 - June 2014

- Assisted on field and laboratory research related to the biology, ecology and management of insect pests of soybean, corn and rice.

Intern, IPM Lab, Federal University of Santa Maria, Santa Maria, RS, Brazil March 2010 - Jan 2014

- Assisted graduate students in field and laboratory research related to the biology, ecology and management of insect pests of soybean, corn and wheat.

Ag technician, *Farm Eliane*, São Desidério, BA, Brazil

Feb 2007 - July 2009

- Scouted and monitored pests in corn, soybean, and cotton fields.
- Coordinated and applied control measures.
- Conducted field trials to evaluate insecticide efficacy.
- Processed soybean seed production.

TRAINING

1. Center of Excellence in Learning and Teaching. PFF program. Iowa State University Fall 2020
- Present
 - The Preparing for Future Faculty (PFF) helps to prepare postdoctoral fellows, Ph.D. students, and master's students for an academic career and provide further credentialing to be competitive on the academic job market.
 - Combination of seminars, mentoring, and practical classroom and departmental service experiences.
2. Center of Excellence in Learning and Teaching. TA Resources. Iowa State University Spring 2019
3. Center for Communication Excellence. Advanced speaking for international TAs Fall 2019
 - Advanced Spoken English: Emphasis on presentation skills, developing explanations, and leading discussions in a teaching environment.

GRANTS

Grant funded projects

1. Project Title: Detecting Insecticide-Resistant Aphids before Field Failures Cost Farmers

Sponsor: NIFA/USDA

Funding Awarded: \$200,000

Investigators: O'Neal, M., Coates, B., Hodgson, E.

Role: Content Contributor - Contributed to idea development, drafting, and editing the project proposal; Working on the project as an investigator.

STUDENT MENTORING

Undergraduate Students

2016 - present

- Mentoring, supervising, and delegating research responsibilities to students associated with research projects. (Total: 12 students since 2016).

SERVICE

Professional Societies and Memberships

1. Entomological Society of America - Member 2014, 2018 - present
2. Entomological Society of America 2020

- Served as moderator for Q&A session during the *A New Vision for Managing the “Wicked Problem” of Pest Resistance* symposium.
- 3. Entomological society of Brazil - Member 2018 - present

Organizational Service

Iowa State University

- 1. Vice President - Entomology Student Organization 2020 - present
- 2. Member - Entomology Seminar Series Committee 2020 - present
- 3. Member – Brazilian Student Organization 2018 - present

Federal University of Santa Maria

- 1. Member, Department of Crop Protection. II Seminar of soybean pests in Southern Brazil. 2016
- 2. Co-Organizer, III Symposium on crop production: Winter crops. 2013
- 3. Co-Organizer, Seminar series: Academic presentations. 2012
- 4. Co-Organizer, II Symposium on crop production: Corn. 2012
- 5. Member, Seminar series: Ways to adjust your planter for success. 2012
- 6. Co-Organizer, I Symposium on crop production: Soybean. 2011
- 7. Member, Seminar series: Sprayer calibration guidelines. 2011

LANGUAGE PROFICIENCY

- 1. Portuguese (Native Speaker)
- 2. English (Fluent)