

Maxwel Coura Oliveira

ASSOCIATE RESEARCHER - WEED SCIENTIST

University of Wisconsin - Madison

☎ +55 18 99690 1070 | ✉ maxwelco@gmail.com | 🌐 maxweeds.rbind.io | 📷 maxwelco | 🐦 maxwelco

Education

Ph.D. in Agronomy (Weed Science) · University of Nebraska-Lincoln December 2017

Dissertation: Evolution of HPPD-inhibitor herbicide resistance in a waterhemp (*Amaranthus tuberculatus* var. *rudis*) population from Nebraska, USA

Advisor: Dr. Stevan Knezevic, *Co-advisor:* Dr. Todd Gaines, Dr. Amit Jhala

MSc. in Plant Science (Weed Science) · Federal University of Jequitinhonha and Mucuri Valleys July 2013

Thesis: Competitive ability of corn with *Commelina benghalensis* and *Richardia brasiliensis*

Advisor: Dr. José B Santos

BSc. in Agronomy · Federal University of Jequitinhonha and Mucuri Valleys July 2011

Thesis: Composition and extraction of minerals in forage grass in a previously soil waste urban deposit area

Advisor: Dr. Karina G. Ribeiro

Professional experiences

UNIVERSITY OF WISCONSIN-MADISON

Research Associate/Data analyst, WiscWeeds Lab · Remote Jan 2020 - Current

- Writing manuscripts/grants
- Mentoring graduate students
- Data analysis/modeling

Postdoctoral Research Associate, WiscWeeds Lab · Madison · WI · USA Jan 2018 - Dec 2019

- Research focus on weed management on corn, soybeans and industrial hemp
- Investigations on herbicide resistance weeds in Wisconsin
- Train the Wisconsin Weed Science Team
- Mentoring graduate/undergraduate students
- Writing manuscripts/grants
- Extension talks and activities
- Field herbicide efficacy trials
- Data analysis/modeling

WESTERN SÃO PAULO UNIVERSITY

Assistant Professor · Presidente Prudente · SP · Brazil Feb 2020 - Feb 2021

- Teaching to graduate and undergraduate levels
- Research on weed management strategies in dry land

UNIVERSITY OF NEBRASKA-LINCOLN

Graduate Research Assistant, Knezevic Lab · Concord/Lincoln · NE · USA Jan 2014 to Dec 2017

- Herbicide resistance/weed ecology studies: field, greenhouse, and laboratory
- Field herbicide efficacy trials
- Extension talks and activities
- Data analysis/modeling

TIMAC AGRO BRASIL

Sales Management Trainee Paragominas · PA · Brazil

Jan to June 2013

- Sales prospecting/marketing
- Talent acquisition
- Training

FEDERAL UNIVERSITY OF JEQUITINHONHA AND MUCURI VALLEYS (UFVJM)

Graduate Research Assistant, Diamantina · MG · Brazil

July 2011 to Dec 2012

- Research on weed biology/ecology studies
- Herbicide ecotoxicology

Undergraduate Research Assistant, Diamantina · MG · Brazil

Mar 2006 to July 2011

- Fate of herbicide in soils
- Forage grass for soil health

THE OHIO PROGRAM

Undergraduate Senior Trainee, OH · USA

April 2010 to March 2011

- Farm assistant in vegetable/orchard at Long's Family Farm in Commerce, MI, USA
- Greenhouse assistant in hydroponic tomatoes at Intergrow Greenhouses in Albion, NY, USA

PULVERIZA FERTILIZANTES

Undergraduate Junior Trainee, Matipó · MG · Brazil

July 2009

- Assisted in foliar fertilizer manufacturing

EMATER MG

Undergraduate Intern, Santana do Paraíso · MG · Brazil

July 2008

- Assisted on consulting and extension activities to small vegetables growers

Peer-reviewed publications

1. Ribeiro VHV, Smith DH, **Oliveira MC**, Santos JB, Werle R (2021) Evaluating efficacy of preemergence soybean herbicides using field treated soil in greenhouse bioassays. Accepted at *Weed Technology*.
2. Ribeiro VHV, Maia LGS, Arneson NJ, **Oliveira MC**, Read HW, Ané JM, Santos JB, Werle R (2021) Influence of PRE-emergence herbicides on soybean development, root nodulation and symbiotic nitrogen fixation. *Crop Protection* 144:105576 doi: j.cropro.2021.105576
3. **Oliveira MC**, da Silva AL, Ulguim AR, and Werle R (2021) Assessment of weed management strategies and challenges in Brazilian cropping systems. *Weed Technology* 35:155-165 doi: 10.1017/wet.2020.96
4. Striegel S, **Oliveira MC**, Arneson N, Conley SP, Stoltenberg DE, and Werle R (2021) Spray solution pH and soybean injury as influenced by synthetic auxin formulation and spray additives. *Weed Technology* 35:113-127 doi: 10.1017/wet.2020.89
5. **Oliveira MC**, Giacomini D, Arsenijevic N, Vieira G, Tranel P, and Werle R (2021) Distribution and validation of genotypic and phenotypic glyphosate and PPO-inhibitor resistance in Palmer amaranth (*Amaranthus palmeri*) from southwestern Nebraska. *Weed Technology* 35:65-76. doi: 10.1017/wet.2020.74
6. **Oliveira MC**, Osipitan OA, Begcy K, and Werle R (2020) Cover crops, hormones and herbicides: priming an integrated weed management Strategy. *Plant Science* 301:110550 doi: 10.1016/j.plantsci.2020.110550
7. Soltani S, **Oliveira MC**, Alves GS, Werle R, Norsworthy JK, Sprague CL, Young BG, Reynolds DB, Brown A, and Sikkema PH (2020) Off-target movement assessment of dicamba in North America. *Weed Technology* 34:318-330. doi: 10.1017/wet.2020.17

8. **Oliveira MC**, Butts L, and Werle R (2019) Survey of cover crop management in Nebraska. 9:1-14 *Agriculture* (Invited publication). doi: 10.3390/agriculture9060124
9. Knezevic SZ, Pavlovic P, Barnes ER, Beiermann C, **Oliveira MC**, Lawrence N, Scott JE, and Jhala AJ (2019) Critical time for weed removal in glyphosate-resistant soybean as influenced by preemergence herbicides. 33:393-399. *Weed Technology*. doi: 10.1017/wet.2019.18
10. Ferreira EA, Paiva MCG, Pereira GAM, **Oliveira MC**, Silva, EB (2019) Fitossociologia de plantas daninhas na cultura do milho submetida à aplicação de doses de nitrogênio, *Journal of Neotropical Agriculture*, 6:100-107 (in Portuguese with English abstract). doi: 10.32404/rean.v6i2.2710
11. Werle R, **Oliveira MC**, Jhala AJ, Klein R, Proctor CA, and Rees J (2018) Survey of Nebraska farmers' adoption of dicamba-tolerant soybean technology and off-target movement. *Weed Technology*, 32:754-761. doi: 10.1017/wet.2018.62
12. **Oliveira MC**, Gaines TA, Patterson EP, Jhala AJ, Irmak S, Amundsen K, and Knezevic SZ (2018) Interspecific and intraspecific transfer of metabolism based mesotrione resistance transfer in dioecious weedy *Amaranthus*. *Plant Journal*. 96:1051-1063. doi: 10.1111/tbj.14089
13. Knezevic SZ, Ospitan AO, **Oliveira MC**, and Scott JE (2018) *Lythrum salicaria* (purple loosestrife) control with herbicides: multiyear applications. *Invasive Plant Science and Management*. 11:143-154. doi: 10.1017/inp.2018.17
14. **Oliveira MC**, Pereira GAM, Ferreira EA, Barbosa JB, Knezevic SZ, and Werle R (2018) Additive design: the concept and data analysis. *Weed Research*, 58:338-347. doi: 10.1111/wre.12317
15. **Oliveira MC**, Gaines TA, Jhala AJ, and Knezevic SZ (2018) Inheritance of mesotrione resistance in an (*Amaranthus tuberculatus*) (var. *rudis*) population from Nebraska, USA. *Frontiers in Plant Science*, 9:60. doi: 10.3389/fpls.2018.00
16. Miller JJ, Schepers JS, Shapiro CA, Arnenson NJ, Eskridge KM, **Oliveira MC**, and Giesler LJ (2018) Characterizing soybean vigor and productivity using multiple crop canopy sensor readings. *Field Crops Research*, 216:22-31. doi: 10.1016/j.fcr.2017.11.006
17. **Oliveira MC**, Gaines TA, Dayan FE, Patterson EL, Jhala AJ, and Knezevic SZ (2018) Reversing resistance to tembotrione in an *Amaranthus tuberculatus* (syn. *rudis*) population from Nebraska, USA with cytochrome P450 inhibitors. *Pest Management Science*, 74:2296-2305. (Invited publication) doi: 10.1002/ps.4697
18. **Oliveira MC**, Feist D, Eskelsen S, Scott JE, and Knezevic SZ (2017) Weed control in soybean with preemergence and postemergence-applied herbicides. *Crop, Forage, and Turfgrass Management*, 3:1-7
19. **Oliveira MC**, Jhala A, Gaines T, Irmak S, Amundsen K, Scott JE, and Knezevic SZ (2017) Confirmation and control of HPPD-inhibiting herbicide-resistant waterhemp (*Amaranthus tuberculatus*) in Nebraska. *Weed Technology*, 31:67-79. doi: 10.1017/wet.2016.4
20. Butts TR, Miller JJ, Pruitt JD, Vieira BC, **Oliveira MC**, Ramirez II S, and Lindquist JL (2017) Light quality effect on corn growth as influenced by weed species and nitrogen rate. *Journal of Agricultural Science*, 9:15-27. doi: 10.5539/jas.v9n1p15
21. Braga RR, Santos JB, Zanuncio JC, Bibiano CS, Ferreira EA, **Oliveira MC**, Silva DV, and Serrão JE (2016) Effect of growing *Brachiaria brizantha* on phytoremediation of picloram under different pH environments. *Ecological Engineering*, 94:102-106. doi: 10.1016/j.ecoleng.2016.05.050
22. Magalhães JES, Ferreira EA, **Oliveira MC**, Pereira GAM, Silva DV, and Santos JB (2016) Effect of plant-biostimulant on cassava initial growth. *Ceres*, 63:208-213 doi: 10.1590/0034-737X201663020012
23. Silva DV, Ferreira, **Oliveira MC**, Pereira GAM, Braga RR, Santos JB, Aspiázú I, and Souza MF (2016) Productivity of cassava and other crops in an intercropping system. *Ciencia e Investigación Agraria*, 43:159-166. doi: 10.4067/S0718-16202016000100015
24. Pereira GAM, **Oliveira MC**, Braga RR, Silva DV, Oliveira AJM, Fernandes JSC, and Andrade Junior VC (2015) Growth of carrot cultivars in different environments. *Comunicata Scientiae*, 6:317-325. (in Portuguese with English abstract)
25. Santos RC, Ferreira EA, Santos JB, **Oliveira MC**, Silva DV, Pereira GAM, Galon L, Aspiázú I, and Mattos NP (2015) Phytosociological characterization of weed species as affected by soil management. *Australian Journal of Crop Science*, 9:112-119

26. Pereira GAM, **Oliveira MC**, Oliveira, AJM, Fernandes JSC, Andrade Junior VC, Silva DV, and Ferreira EA (2015) Performance of carrot genotypes at two Jequitinhonha Valley sites. *Semina: Ciências Agrárias*, 36:4059-4070. doi: 10.5433/1679-0359.2015v36n6Supl2p4059
27. Ferreira EA, Silva DV, Braga RR, **Oliveira MC**, Pereira GAM, Santos JB, and Sedyama T (2014) Initial growth of cassava in intercropping system. *Scientia Agraria Paranaensis*, 13:219-226
28. Franco MHR, Nery MC, França AC, **Oliveira MC**, Franco GCN, and Lemos VT (2013) Production and physiological quality of bean seeds after application diquat. *Semina: Ciências Agrárias*, 34:1707-1714 (in Portuguese with English abstract). doi: 10.5433/1679-0359.2013v34n4p1707
29. Pereira GAM, Lemos VT, Santos JB, Ferreira EA, Silva DV, **Oliveira MC**, and Menezes CWG (2012) Growth of cassava and weed in response to phosphate fertilizer. *Ceres*, 59:716- 722 (in Portuguese with English abstract). doi: 10.1590/S0034-737X2012000500019
30. Miranda VS, Ribeiro KG, Silva AC, Pereira RC, Pereira OG, Torrado PV, Fernandes JSC, and **Oliveira MC** (2012) Rehabilitation with forage grasses of an area degraded by urban solid waste deposits. *Brazilian Journal of Animal Science*, 41:18-23. doi: 10.1590/S1516-35982012000100003

Technical bulletins and extension articles

1. Striegel S, **Oliveira MC**, Arneson NJ, Conley SP, Stoltenberg DE, and Werle R (2020) Spray solution pH as influenced by synthetic auxin formulation and spray additives. *WiscWeeds* Link
2. Striegel S, **Oliveira MC**, Arneson NJ, Conley SP, Stoltenberg DE, and Werle R (2020) Soybean injury as influenced by synthetic auxin formulation and spray additives. *WiscWeeds* Link
3. Alves DP, Reis MR, Pereira GAM, Silva MMJ, Nascimento MA, and **Oliveira MC** (2020) Injúrias causadas por residual de herbicidas na cultura do alho. *Universidade Federal de Viçosa* Link
4. Gomes CA, Reis MR, Silva MMJ, Pereira GAM, and **Oliveira MC** (2020) Injúrias causadas por residual de herbicidas na cultura da cebola. *Universidade Federal de Viçosa* Link
5. **Oliveira MC**, Pereira GAM, Takano H, Nunes AL, and Reis MR (2020) Classificação dos herbicidas no Brasil. *maxweeds* Link
6. Arneson NJ, Smith DH, DeWerff R, **Oliveira MC**, and Rodrigo Werle (2019) Residual control of waterhemp with pre-emergence herbicides in soybean. *WiscWeeds* Link
7. Smith DH, Broeske M, Patton J, Shelley K, Arriaga F, Jensen B, **Oliveira MC**, Briski B, Bubolz B, Rushmann R, Johnson H, Schrieffer G, and Sorge M (2019) Cover Crops 101. *University of Wisconsin-Madison* Link
8. **Oliveira MC** and Werle R (2018) Herbicide site of action key for crop injury symptoms. *WiscWeeds* Link: EN and PT.

Invited talks and presentations

KEYNOTE SPEAKER

1. II Workshop Internacional de Defesa Sanitária Vegetal, Online · Brazil September 2020
Lecture: “Dispersão de plantas daninhas resistentes a herbicidas no mundo” (in Portuguese)
2. II IMAST, Dracena · SP · Brazil September 2018
Lecture: Da resistência ao dicamba: o desafio no manejo de plantas daninhas nos EUA”(in Portuguese)
3. JF Crow Institute for the Study of Evolution, Madison · WI · USA September 2018
Lecture: Evolution of 4-hydroxypheypyruvate dioxygenase inhibitor herbicide resistance in *Amaranthus tuberculatus*

SCIENTIFIC CONFERENCES

1. **Oliveira MC** et al (2019) Growers’ Feedback on the Use of Cover Crops for Weed Management in Nebraska. North Central Weed Science Society Annual Meetings: Cover crop symposium, Columbus, OH
2. **Oliveira MC** et al (2019) A cropping-system weed science survey of Brazil, a breadbasket country in the tropics. Proceeding of the Weed Science Society of America Annual Meetings, New Orleans, LA

3. **Oliveira MC** et al (2017) A qualitative assay for detecting Palmer amaranth and its hybrids amongst pigweed species. Proceeding of the North Central Weed Science Society Annual Meetings, Saint Louis, MO
4. **Oliveira MC** et al (2016) Investigations into target-site and nontarget site resistance mechanisms in HPPD resistant waterhemp from Nebraska. Proceeding of the North Central Weed Science Society Annual Meetings, Des Moines, IA
5. **Oliveira MC** et al (2015) Soybean yields and critical time for weed removal as influenced by soil applied herbicides. Proceeding of the North Central Weed Science Society Annual Meetings, Indianapolis, IN
6. **Oliveira MC** et al (2014) Confirmation of HPPD Resistant Common Waterhemp in Nebraska. Proceeding of the North Central Weed Science Society Annual Meetings, Minneapolis, MN

WORKSHOPS

1. Oliveira MC (2019) Data analysis for weed research: ANOVA and dose response. Workshop to the University of São Paulo Weeds Team. Remote. [Link](#)
2. Oliveira MC (2019) Data Wrangling with Dplyr. North Central Weed Science Society Annual Meetings: Using RStudio for Visualization and Analysis of Weed Science Experiments, Columbus, OH
3. Oliveira MC (2019) Creating Reproducible Reports Using R Markdown. North Central Weed Science Society Annual Meetings: Using RStudio for Visualization and Analysis of Weed Science Experiments, Columbus, OH

EXTENSION AND TRAINING EVENTS

1. Oliveira MC (2019) Waterhemp Resistance Evolution and Status. Regional Waterhemp Workshop Series, Wisconsin.
2. Oliveira MC (2019) Training on herbicide weed management and herbicide weed identification. Valoriza Agronegocios, Patos de Minas, MG, Brazil
3. Oliveira MC (2011) Integrated weed management strategies in cassava, Diamantina, MG, Brazil

Research qualifications and skills

LABORATORY

- Experience on liquid and gas chromatography mass spectrometry (LC- and GC-MS), spectrophotometer, gene sequencing, expression, and molecular markers

GREENHOUSE AND FIELD

- Experiment setup and design, resistance screening, grading, dose response, herbicide efficacy, herbicide selectivity, crop safety, herbicide dissipation in the soil, carryover, herbicide synergism, integrated weed management, and cover crops

DATA ANALYSIS/MODELING

- High skills in data analysis using different packages from R and Rstudio: blog, presentations, reports, books, manuscripts, data visualization, maps, ANOVA, linear and non-linear models, mixed models, machine learning, and others
- Advance in LaTeX, Markdown, and GitHub
- Intermediate in SAS, Terminal, and HTML/CSS

INTERPERSONAL AND COMMUNICATION SKILLS

- Ability to work, collaborate and communicate effectively (problem solving) with people from different backgrounds and cultures

LANGUAGES

- Portuguese (Native)
- English (Fluent)
- Spanish (Intermediate)

Certifications

- Pesticide applicator license March 2018
Issue by Wisconsin Department of Agriculture
- Teaching and tidyverse instructor certification February 2021
Issue by Rstudio

Grants, scholarships and awards

- Wisconsin Dairy Innovation Hub March 2021
Co-author - Submitted (US\$48K)
- American Society of Agronomy, San Antonio, TX · USA November 2019
Cover Crop 101, Extension Education Community Award, category short publication (16 pages or less)
- Wisconsin Corn Promotion Board January 2019
Challenging the Weed Management Challenges in Wisconsin Corn Production (\$30,000)
- North Central Weed Science Society Meeting, Saint louis · MO · USA December 2017
1st Place Outstanding Poster Presentation (Herbicide Resistance section)
- North Central Weed Science Society Weed Contest, Ames · IA · USA July 2017
1st Place Graduate Team and 1st Place Overall Individual Herbicide ID
- University of Nebraska-Lincoln, Lincoln · NE · USA March 2017
Travel Grant (\$400) to attend the 2017 Global Herbicide Resistant Conference
- North Central Weed Science Society Weed Contest, West Lafayette · USA July 2016
3rd Place Graduate Team
- Weed Science Society of America Meeting, San Juan · PR February 2015
1st Place Outstanding Poster Presentation (Weed Biology section)
- Western Weed Science Society Weed Contest, Columbus · OH · USA July 2015
3rd Place Graduate Team and 3rd Place Overall Individual Graduate
- LASPAU-administered Ph.D. Fulbright scholarship September 2013
Science without Borders Brazilian Program - Ph.D at the University of Nebraska-Lincoln (\$130,000)
- CNPq undergraduate scholarship, Diamantina · MG · Brazil Aug 2008 to Jul 2009
- Mayrink Vieira High School Science Fair, Ipatinga · MG · Brazil September 2002
Outstanding team project “Batteries and electrolysis”
- Mayrink Vieira High School Science Fair, Ipatinga · MG · Brazil September 2001
Outstanding team project “Cell organelles”

Teaching, mentoring and leadership

TEACHING

- Programming in R, Western São Paulo University Fall 2019/2020
- Weed Biology and Management, Western São Paulo University Spring/Fall 2020
- Wheat, Western São Paulo University Spring/Fall 2020
- Weeds Contest Preparation, *University of Wisconsin-Madison* Spring 2018
- Invasive Plants Lab (*Teaching Assistant*), *University of Nebraska-Lincoln* Spring 2016/2017
- Weed Biology and Management Lab (*Teaching Assistant*), *UFVJM* Spring 2011
- Crop Improvement Lab (*Teaching Assistant*) *UFVJM* Spring/Fall 2009

MENTORING AND STUDENT SUPERVISION

- Michele Cardoso Santos, Undergraduate Lab Assistant · Western São Paulo University 2020/21

• Diogo Mendonça Rodrigues Lemos, MSc · Western São Paulo University	2020/21
• Wilson Geraldo Pereira Neto, MSc · University of São Paulo	2020/21
• Victor Hugo Vidal Ribeiro, MSc · University of Wisconsin-Madison	2018-20
• Sarah Striegel, MSc · University of Wisconsin-Madison	2018-20
• Haleigh Ortmeier-Clarke, MSc · University of Wisconsin-Madison	2019/20
• Kolby Grint, MSc · University of Wisconsin-Madison	2019/20
• Felipe Faleco, MSc · University of Wisconsin-Madison	2019/20
• Nikola Arsenijevic, MSc · University of Wisconsin-Madison	2019
• Lina Liu, Undergraduate Lab Assistant · University of Wisconsin-Madison	2018
• David Wang, Undergraduate Lab Assistant · University of Wisconsin-Madison	2018
• Pavle Pavlovic, Undergraduate Research Assistant · University of Nebraska-Lincoln	2017
• Amanda Wistead, Undergraduate Research Assistant · University of Nebraska-Lincoln	2014/15
• Ícaro Freitas, Undergraduate Research Assistant · University of Nebraska-Lincoln	2014
• Sergio Gonçalves Oliveira, Undergraduate Research Assistant · University of Nebraska-Lincoln	2014
• Kyle Kardell, Undergraduate Research Assistant · University of Nebraska-Lincoln	2014

COMMITTEE MEMBER FOR DEGREE THESIS

• Victor Hugo Vidal Ribeiro, MSc · UFVJM/University of Wisconsin-Madison	2020
• João Emílio Magalhães, BSc · UFVJM	2011

STUDENT LIAISON CREA JR

• Coordinator for the city of Diamantina, MG	2008/09
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Professional society memberships

- Brazilian Weed Science Society
- North Central Weed Science Society
- Weed Science Society of America

Services

- Founder and creative director, Open Weed Science - <https://www.openweedsci.org/>
- Podcast interviews
 - Knowing the herbicides - Link
 - Herbicide mode of action (Pigment inhibitors) - Link
- Ad-hoc Reviewer for Weed Research, Pest management Science, Agronomy, Weed Science, Journal of Agricultural Science, Crop Protection, Plos one, Scientia Agricola, Chemosphere, Planta daninha
- Assistant Editor for Colloquium Agrariae Journal
- Poster judge for 2019 Weed Science Society of America Meeting, New Orleans, LA
- Poster judge for North Central Weed Science Society Meeting, 2018/19/20
- Grader for North Central Weed Science Society Weeds Contest, 2018/19
- Program Chair of the 2018 North Central Weed Science Society Meeting Milwaukee, WI
- Staff of Wisconsin Weed Science Field Day, Arlington and Lancaster · WI · USA, 2018
- Field staff organization of Flaming Weed Control Workshop, Concord · NE · USA, 2014/15/16/17

- Staff of II Seminar of Forage and Rangeland Sciences, Diamantina · MG · Brazil, 2009
- Staff of I Seminar of Engineers, Diamantina · MG · Brazil, September 2009