

# Maxwel Coura Oliveira

WEED AND DATA ANALYST

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## 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

### WESTERN SÃO PAULO UNIVERSITY

*Assistant Professor* · Presidente Prudente · SP · Brazil Fev 2020 - Current

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

### 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

### 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

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1. **Oliveira MC**, da Silva AL, Ulguim AR, and Werle R (2020) Assessment of weed management strategies and challenges in Brazilian cropping systems. *Weed Technology in press* doi: 10.1017/wet.2020.96
2. Striegel S, **Oliveira MC**, Arneson N, Conley SP, Stoltenberg DE, and Werle R (2020) Spray solution pH and soybean injury as influenced by synthetic auxin formulation and spray additives. *Weed Technology in press*. doi: 10.1017/wet.2020.89
3. **Oliveira MC**, Giacomini D, Arsenijevic N, Vieira G, Tranel P, and Werle R. Distribution and validation of genotypic and phenotypic glyphosate and PPO-inhibitor resistance in Palmer amaranth (*Amaranthus palmeri*) from southwestern Nebraska. *Weed Technology. In press*. doi: 10.1017/wet.2020.74
4. **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
5. 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
6. **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
7. 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

8. 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
9. 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
10. **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
11. 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
12. **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
13. **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.2018.00060
14. 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
15. **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
16. **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
17. **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
18. 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
19. 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
20. 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
21. Silva DV, Ferreira, **Oliveira MC**, Pereira GAM, Braga RR, Santos JB, Aspiazú 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
22. 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)
23. Santos RC, Ferreira EA, Santos JB, **Oliveira MC**, Silva DV, Pereira GAM, Galon L, Aspiazú I, and Mattos NP (2015) Phytosociological characterization of weed species as affected by soil management. *Australian Journal of Crop Science*, 9:112–119
24. 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
25. Ferreira EA, Silva DV, Braga RR, **Oliveira MC**, Pereira GAM, Santos JB, and Sediyaama T (2014) Initial growth of cassava in intercropping system. *Scientia Agraria Paranaensis*, 13:219-226

26. 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
27. 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
28. 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

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1. 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
2. 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
3. **Oliveira MC**, Pereira GAM, Takano H, Nunes AL, and Reis MR (2020) Classificação dos herbicidas no Brasil. *maxweeds* Link
4. Arneson NJ, Smith DH, DeWerff R, **Oliveira MC**, and Rodrigo Werle (2019) Residual control of waterhemp with pre-emergence herbicides in soybean. *WiscWeeds* Link
5. 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
6. **Oliveira MC** and Werle R (2018) Herbicide site of action key for crop injury symptoms. *WiscWeeds* Link: EN and PT.

## Invited talks and presentations

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### 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 Wrangling with Dplyr. North Central Weed Science Society Annual Meetings: Using RStudio for Visualization and Analysis of Weed Science Experiments, Columbus, OH
2. 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

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### 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 softwares: 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 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)

## Grants, scholarships and awards

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- 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 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
- Diogo Mendonça Rodrigues Lemos, MSc · Western São Paulo University 2020
- Wilson Geraldo Pereira Neto, MSc · University of São Paulo 2020
- 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

### **Professional society memberships**

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

### **Services**

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- Founder and board member, Open Weed Science - <https://www.openweedsci.org/>
- 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
- 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