Maxwel **Coura Oliveira**

CROP

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Summary

Agronomist bridging precision farming and nature-based solutions, with expertise in field, soil health, cover crops, and data-driven land management for climate resilience. Proven expertise in agronomic R&D, arable land, crop protection, field trials, and advanced data analysis, with strong skills in statistical modeling, machine learning, and data visualization using R, Python, and other tools.

Professional experiences

BASF Digital Farming

Senior Digital Agronomist · Cologne · NRW · Germany   Oct 2023 - Current

- Coordinated smart spraying research and development for the **One Smart Spray** platform in the US, enhancing precision farming capabilities.
- Built and maintained strong stakeholder relationships, fostering collaboration across global teams.
- Developed precision ag tools (**OneSmartSpray**) to reduce agrochemical use—aligning with nature-based carbon strategies by minimizing farm emissions.
- Agronomic coordinator of *Expert Scouting Trip* (field monitoring) project based on modeling and remote sensing of the **xarvio AgBusiness** platform.

McGill University

Assistant Professor of Weed Science · Saint-Anne-de-Bellevue · QC · Canada   Dec 2022 - Sep 2023

- Tenure-track research and teaching in Weed Science.
- Led agronomic research projects on sweet corn with Groupe Bonduelle and delivered extension talks to stakeholders.

TeeJet Technologies South America

Research and Training Coordinator · Sao Paulo · SP · Brazil   Nov 2021 - Oct 2022

- Developed strategies for nozzle positioning in pesticide application, and maintained relationships with stakeholders.
- Led certified training programs for pesticide applicators on auxin herbicide (e.g., 2,4-D, dicamba) application in field crops.

Western São Paulo University

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

- Taught courses and workshops on weed biology, agronomy, and programming in R.
- Conducted surveys and research on herbicide weed management and cover crop strategies in corn and soybean farming systems.

University of Wisconsin-Madison

Research Associate/Data analyst, WiscWeeds Lab · Remote   Jan 2020 - Sep 2021

- Analyzed complex datasets with empirical and machine learning models, and published manuscripts in high-impact journals.
- Mentored graduate students in experimental design, writing and data visualization techniques for effectively communicating research findings.

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

- Developed integrated weed management strategies for corn and soybeans in Wisconsin, USA

- Led herbicide resistance studies and field herbicide efficacy trials with chemical industry.

- Conducted research on off-target herbicide movement (e.g., 2,4-D and dicamba) that was used by EPA product registration decision.

- Delivered extension talks and outreach activities to stakeholders and growers.

- Supported students' academic growth and contributed to grant proposals and publications.

University of Nebraska-Lincoln

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

- Conducted field (corn and soybeans), greenhouse, and laboratory research on herbicide resistance, toxicology and weed ecology.

- Designed and executed extension talks on integrated weed management and conducted herbicide efficacy trials with chemical industry.

TIMAC Agro Brasil

Sales Management Trainee, Paragominas · PA · Brazil   Jan to Jun 2013

- Conducted sales prospecting and marketing campaigns to expand client base.

- Organized and delivered training sessions to enhance team performance and product knowledge.

Education

Ph.D. in Agronomy (Weed Science) · University of Nebraska-Lincoln   Jan 2014 to Dec 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   Ago 2011 to Jul 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   Mar 2006 to Jul 2011
Thesis: Composition and extraction of minerals in forage grass in a previously soil waste urban deposit area
Advisor: Dr. Karina G. Ribeiro

Research qualifications and skills

Technical Expertise

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

- *Field/Greenhouse*: Agronomic crops, 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

- Skills in data analysis using different packages from R and Rstudio software: blog, presentations, reports, books, manuscripts, data visualization, maps, ANOVA, linear and non-linear models, mixed models, machine learning, and others. Advance skills in Python, LaTeX, Quarto, Markdown, and GitHub. Also, intermediate skills in SAS, Terminal, and CSS.

Languages

- *Portuguese*: Native proficiency (reading, writing, and speaking).

- *English*: Fluent proficiency (reading, writing, and speaking).

- *Spanish*: Intermediate proficiency (reading and conversational speaking, listening).
- *Italian*: Intermediate proficiency (reading, conversational speaking, listening).
- *French*: Basic proficiency (reading, listening).
- *German*: Basic proficiency (reading, basic speaking).

Selected peer-reviewed publications

Weed ecology

1. **Oliveira MC**, Jhala AJ, Bernards ML, Proctor CA, Stepanovic S, Werle R (2022) Palmer Amaranth (*Amaranthus palmeri*) Adaptation to US Midwest Agroecosystems. *Frontiers in Agronomy* 4, doi: 10.3389/fagro.2022.887629

2. Mobli A, **Oliveira MC**, Butts L, Proctor C, Lawrence N, Werle R (2022) Emergence pattern of horseweed (*Erigeron canadensis* L.) accessions across Nebraska. *Weed Technology* 36:655-662 doi: 10.1017/wet.2022.62

Agronomic crops

1. Grint K, Arneson NJ, Arriaga F, DeWerff R, **Oliveira M**, Smith DH, Stoltenberg DE, Werle R (2022) Cover Crops and preemergence herbicides: an integrated approach for weed management in corn-soybean systems in the US Midwest. *Frontiers in Agronomy* 4:888349 10.3389/fagro.2022.888349

2. Ortmeier-Clarke HJ, Laboski CAM, **Oliveira MC**, Arneson NJ, Conley SP, Werle R (2023) Cultivar and management effects on industrial hemp yields in Wisconsin. Agronomy Journal 115:1335-1343 doi: 10.1002/agj2.21297

Agronomic surveys

1. **Oliveira MC**, da Silva AL, Ulguim AR, and Werle R (2021) Assessment of weed management strategies and challenges in Brazilian cropping systems. *Weed Technology* 32:754-761 doi: 10.1017/wet.2020.96

2. Werle R, **Oliveira MC**, Jhala AJ, Proctor CA, Rees J Klein R (2018) Survey of Nebraska farmers' adoption of dicamba-resistant soybean technology and dicamba off-target movement. *Weed Technology* 6:754-761 doi: 10.1017/wet.2018.62

A complete list of publications is available upon request or can be accessed on Maxwel Coura Oliveia - Google Scholar

Invited talks and presentations

Keynote speaker and invited lecturer

1. II Workshop Internacional de Defesa Sanitária Vegetal, Online · Brazil   September 2020
   Lecture: "Dispersão de plantas daninhas resistêntes 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-hydroxyphepylpiruvate dioxygenase inhibitor herbicide resistance in *Amaranthus tuberculatus*

Workshops

1. **Oliveira, MC**. *Presenter*. Weed research data analysis with R. Brazilian Weed Science Meeting, Rio Verde, GO - 2022

2. **Oliveira, MC**. *Presenter*. Data Wrangling with Dplyr. North Central Weed Science Society Annual Meetings: Using RStudio for Visualization and Analysis of Weed Science Experiments, Columbus, OH - 2019

3. **Oliveira, MC**. *Presenter*. 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 - 2019

Selected grants, scholarships and awards

1. North Central Weed Science Society Meeting, Saint louis · MO · USA   Dec 2017
   1st Place Outstanding Poster Presentation (Herbicide Resistance section)

2. North Central Weed Science Society Weed Contest, Ames · IA · USA   Jul 2017
   1st Place Graduate Team and 1st Place Overall Individual Herbicide ID

3. Weed Science Society of America Meeting, San Juan · PR   Feb 2015
   1st Place Outstanding Poster Presentation (Weed Biology section)

4. LASPAU-administered Ph.D. Fulbright scholarship   Sep 2013
   Science without Borders Brazilian Program – Ph.D at the University of Nebraska-Lincoln ($130,000)

Certification

1. Teaching and tidyverse instructor certification   February 2021
   Issue by Rstudio

2. Pesticide applicator license   March 2018
   Issue by Wisconsin Department of Agriculture