

GRADUATE AG RESEARCH SPOTLIGHT



Marcelo Zimmer

"I really like the way the University is organized toward Extension and getting technology to the farmers and industry. I wanted to see what I could take back home."

Marcelo Zimmer, PhD student, Botany and Plant Pathology

THE RESEARCHER: The technologies Marcelo Zimmer is working on in the Department of Botany and Plant Pathology at Purdue could very well make their way back to his hometown of Princesa in the southern region of Brazil. Most of its 3,000 residents are involved in farming, including his parents. As Zimmer and his three brothers — one older, one a twin, one younger — helped on the family's dairy and soybean operation, Marcelo observed his parents' struggle with the uncertainties of farming. "I wanted to help them," he says. He attended an agriculture-focused boarding school before earning a bachelor's degree in agronomy at the Federal University of Pelotas. As an undergraduate, he spent 10 months at Purdue as an exchange student and intern in the lab of Bill Johnson, professor of weed science. "That got me interested in coming back for graduate school," Zimmer says. With Johnson's guidance, Zimmer completed a master's degree, researching a new herbicide from Dow AgroSciences for control of horseweed (*Erigeron canadensis*), a problem in his area of Brazil. He began doctoral study in January 2018.

THE RESEARCH: Zimmer draws an analogy between his current research on managing herbicide resistance in weeds in cropping systems, and antibiotics. "We have a certain number of herbicides that are available, and we're not getting many more in the pipeline," he explains. "So we need to figure out our best management strategies." His work to understand different glyphosate-resistance mechanisms in giant ragweed, *Ambrosia trifida*, may be helpful in developing these strategies. His research

integrates field and greenhouse studies with molecular work in the lab.

GLOBAL IMPACT: New ideas have to start somewhere, and Zimmer's goal is contribute to developments in weed science that have global impact. "All the innovation starts here, then transfers to other countries; I wanted to be in the beginning part," he says. He cites Purdue's relationships with industry, which give researchers access to leading-edge protocols and tools, and conferences where he can interact with industry representatives. The ultimate beneficiaries, he adds, are farmers like his family members: "Farmers have to make a lot of decisions every growing season. We are providing them with the best tools to solve their issues."

ACADEMIC CONTINUITY: Zimmer's interest in Extension aligns well with that of his advisor. Working in Johnson's lab from his internship, which marked his first trip to the U.S., through his MS and PhD programs has provided continuity and support. "He was really approachable from the beginning," Zimmer says. "I had to overcome some struggles with the language at first, but he made it easy. He gives us the independence of doing our own thing, but whenever we have questions, it's very easy to find him."

FUTURE PLANS: Less than a year into his PhD, Zimmer is open to different professional paths, but he envisions continuing research in industry. He is the current graduate student chair for the North Central Weed Science Society and in his spare time, enjoys playing soccer and guitar.