Plant Agriculture: **MSc, PhD**

Plants provide food, raw materials, and a healthy environment, and are the cornerstone for life on earth. Plant Science is key to understanding and enhancing plant life. Research in the Department of Plant Agriculture is divided into four areas: Plant Biochemistry and Physiology, Plant Breeding and Genetics, Crop Production Systems, and Bioproducts.

http://www.plant.uoguelph.ca

**Program**

Plant Agriculture is strongly rooted in crop science and horticultural science but we now encompass applied bioinformatics; molecular genetics; genomics; field, horticultural and greenhouse crops; plant breeding; turf and grassland studies; environmental sustainability; weed science/ecology; and the use of plant materials for health, fibres and industrial products. Furthermore, we recognize that society’s expectations of agriculture are changing to include a wide range of health and environmental services such as producing food with nutraceuticals, protecting biodiversity, mitigating climate change and providing alternative energy sources.

**Admission Requirements**

- The MSc requires a Baccalaureate degree in an honours plant science/biology program, or equivalent, from a recognized university or college with at least a B average over the last two years of full-time study (or equivalent).

- The PhD requires a MSc degree by thesis in a field appropriate to the proposed area of specialization with a minimum B average.

**Application Deadline:** Ongoing

**Entry:** Fall, Winter, Spring

**Research Fields**

- Plant Biochemistry & Physiology
- Plant Breeding & Genetics
- Crop Production Systems
- Bioproducts

**Our Faculty**

Faculty have modern labs with state-of-the-art equipment and access to controlled environment growth facilities and numerous field sites distributed over Ontario. Faculty are located on four campuses affording a variety of opportunities and experiences for our students. Our faculty are internationally recognized as leaders in their scholarly activities. Support for research is obtained from a variety of sources including federal, provincial, international, industrial and grower sponsors.

**IDEAL FOR STUDENTS INTERESTED IN:**

- Increasing plant production efficiency
- Developing new varieties
- Understanding plant growth and development
- Weed control
- Plant-environment interactions
- Discovering new environmentally friendly industrial materials

**CAREER OPPORTUNITIES:**

- Crop Consultant
- Breeder/Geneticist
- Plant Physiologist
- R&D Bio-Based Plastics

**CONTACT INFORMATION**

**Graduate Coordinator, MSc & PhD:**
Dr. Istvan Rajcan
519-824-4120 ext 53564
irajcan@uoguelph.ca

**Graduate Program Assistant:**
Tara Israel
519-824-4120 ext 56077
pagrad@uoguelph.ca
## Departmental Graduate Faculty with Research Areas

**Gale G. Bozzo**  
E.C. Bovey Building  
gbozzo@uoguelph.ca  
Postharvest physiology & secondary metabolism

**John A. Cline**  
Simcoe and Vineland Campus  
jcline@uoguelph.ca  
Fruit tree physiology & management

**Bill Deen**  
Crop Science Building  
bdeen@uoguelph.ca  
Cropping systems; agronomy; nitrogen use efficiency

**Hugh J. Earl**  
Crop Science Building  
hje@uoguelph.ca  
Oilseed physiology & agronomy

**Mehrzad (Milad) Eskandari**  
Ridgetown Campus  
meskanda@uoguelph.ca  
Soybean breeding & genetics

**Chris L. Gillard**  
Ridgetown Campus  
cgillard@uoguelph.ca  
Dry bean agronomy & pest management

**Bernard Grodzinski**  
E.C. Bovey Building  
bgrodzin@uoguelph.ca  
Photosynthesis, carbon partitioning and productivity, manned space program

**David C. Hooker**  
Ridgetown Campus  
dhooker@uoguelph.ca  
Field crop agronomy

**A. Max P. Jones**  
E.C. Bovey Building  
amjones@uoguelph.ca  
Plant propagation and in vitro conservation

**Katerina S. Jordan**  
E.C. Bovey Building  
kjordan@uoguelph.ca  
Turfgrass science; nematology

**Elizabeth A. Lee**  
Crop Science Building  
lizlee@uoguelph.ca  
Corn breeding & genetics

**Lewis N. Lukens**  
Crop Science Building  
lukens@uoguelph.ca  
Bioinformatics, genetics of stress tolerance

**Eric M. Lyons**  
E.C. Bovey Building  
e Lyons@uoguelph.ca  
Stress physiology; root biology of turfgrass species

**Ralph C. Martin**  
Crop Science Building  
r cmartin@uoguelph.ca  
Sustainable food production

**Mary Ruth McDonald**  
Crop Science Building  
mrmcdona@uoguelph.ca  
Diseases & integrated crop management of vegetables

**Barry J. Micallef**  
Crop Science Building  
b micalle@uoguelph.ca  
Physiology & genetics of vegetable crops

**Manjusri Misra**  
Crop Science Building  
mmisra@uoguelph.ca  
Bio-based new materials & green nanotechnology

**Amar Mohanty**  
Crop Science Building  
ammohanty@uoguelph.ca  
Bioeconomy related to biobased materials, biofuels & biorefinery

**Alireza Navabi**  
Crop Science Building  
anavabi@uoguelph.ca  
Wheat breeding

**Gopinadhan Paiyath**  
E.C. Bovey Building  
paiyath@uoguelph.ca  
Postharvest biology; functional foods & nutraceuticals

**K. Peter Pauls**  
Crop Science Building  
p pauls@uoguelph.ca  
Tissue culture; molecular biology techniques to crop improvement

**Manish N. Raizada**  
Crop Science Building  
raizada@uoguelph.ca  
Novel proteomics, genome & protein engineering technologies

**Istvan Rajcan**  
Crop Science Building  
irajcan@uoguelph.ca  
Soybean breeding & genetics; seed composition, bioproducts, yield stability, G x E, exotic germplasm

**Darren E. Robinson**  
Ridgetown Campus  
 drobinso@uoguelph.ca  
Weed management & horticultural crops

**Praveen K. Saxena**  
E.C. Bovey Building  
psaxena@uoguelph.ca  
Plant morphogenesis; conservation; medicinal plant biology

**Art W. Schaafsm**  
Ridgetown Campus  
aschaafs@uoguelph.ca  
Entomology/pathology field crops

**Peter H. Sikkema**  
Ridgetown Campus  
p sikkema@uoguelph.ca  
Weed management; field crops

**Jayasankar Subramanian**  
Vineland Campus  
j subrama@uoguelph.ca  
Tree fruit genetics, breeding & biotechnology

**John Sulik**  
Crop Science Building  
jsulik@uoguelph.ca  
Precision Agriculture, cropping systems, remote sensing and geographic information systems

**Clarence J. Swanton**  
Crop Science Building  
cswanton@uoguelph.ca  
Weed science; weed ecology; cropping systems

**Francois Tardif**  
Crop Science Building  
tardif@uoguelph.ca  
Physiology, ecology & molecular biology of herbicide resistance

**Rene C. Van Acker**  
Johnston Hall  
v anacker@uoguelph.ca  
Weed biology & ecology; biosafety & novel trait confinement; agronomy

**David J. Wolyn**  
E.C. Bovey Building  
dwolyn@uoguelph.ca  
Plant genetics; plant breeding; tissue culture; molecular genetics

---

**CONTACT INFORMATION**

**Graduate Coordinator, MSc & PhD:**  
Dr. Istvan Rajcan  
519-824-4120 ext 53564  
irajcan@uoguelph.ca

**Graduate Program Assistant:**  
Tara Israel  
519-824-4120 ext 56077  
pagrad@uoguelph.ca