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April 2020



A collaboration between OMAFRA and the University of Guelph

Alliance Innovations

Stories of the Alliance people, places and programs generating impact in the agri-food sector in Ontario and around the world.

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In this issue:

- Go #BehindtheNumbers to see how a U of G-industry collaboration is powering Ontario craft brewing innovations
- Agroforestry research underway at the Guelph Research Station
- What's happening at the Ontario Crops Research Centre in Bradford
- News, media/publications and more

What's New?



New mental health program for farmers in Ontario begun with Alliance funding

The program, called *In the Know*, was developed by professor Dr. Andria Jones-Bitton and post-doctoral



Ontario Veterinary College at U of G ranked first in Canada and fifth in the world in the 2021 World University Rankings

The Alliance leverages U of G's unique expertise for the benefit of Ontario—and that



Food, health research projects receive \$4M in federal funding

Two projects bring together funding from the Ontario Agri-Food Innovation Alliance and the NSERC Alliance fund, building on the

researcher Dr. Briana Hagen, both in the Department of Population Medicine at the Ontario Veterinary College. Jones-Bitton began working on the program in 2015 with funding from the Alliance and matching funds from agricultural organizations.

includes the Ontario Veterinary College, which has consistently placed in the top 10 since veterinary science was first included in the rankings in 2015. Rankings are based on factors including overall research impact and reputation.

strong relationship between U of G and OMAFRA for the benefit of the agri-food sector: Dr. Lewis Lukens's work on barley cultivars and Dr. Lee-Anne Huber's project on computerized methods for precision feeding of lactating sows.

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Agroforestry research to be completed this spring

An agroforestry project led by University of Guelph researchers at the Guelph Research Station will be completed this spring.

The project involves intercropping—the practice of growing annual crops such as corn, wheat, soybeans or barley between rows of trees to improve ecological sustainability. The trees will be harvested, and their carbon content measured. This project will further our understanding of the economics of tree-based intercropping systems for the benefit of Ontario landowners and farmers. Completing the project will ensure the full value of this research investment is realized.



Activity involving machinery will take place at the Guelph Research Station during March and April 2021 as trees in the research plots are harvested. The harvest involves a 30-hectare parcel of land along the east side of Victoria Road South between Stone Road East and College Avenue East in Guelph.

The Guelph Research Station is owned by the Agricultural Research Institute of Ontario and managed by the University of Guelph through the Ontario Agri-Food Innovation Alliance.

If you have any questions about the project, please visit uoguelph.ca/trees or contact Remo Pallottini, director, research facilities management at 519-824-4120, Ext. 56639 or by email at remop@uoguelph.ca.

Growing Ontario Solutions: #BehindtheNumbers

#BehindtheNumbers is a series of stories from the Ontario Agri-Food Innovation Alliance

Long-term U of G-industry collaboration powers Ontario craft brewing innovations



Ontario Agri-Food Innovation Alliance
2019-20 ANNUAL REPORT

322
research collaborators

The Alliance fosters collaboration, investment and engagement for the benefit of Ontario

Read the stories #BehindtheNumbers at uoguelph.ca/alliance

A collaboration between [U of G professor Dr. George van der Merwe](#), Department of Molecular and Cellular Biology, and [Escarment Laboratories](#), supplier of liquid yeast cultures for Ontario's \$1.4-billion craft beer industry, has led to new products, processes and technologies that will benefit the Ontario agri-food sector.

Several Escarment Laboratories innovations have been made possible through [Gryphon's LAAIR](#) (Leading to the Accelerated Adoption of Innovative Research) program funding and a strong partnership with van der Merwe. This partnership results in local economic growth, new jobs and opportunities for U of G graduates, and a better understanding of yeast, "helping the brewers that we work with to make better beer, reduce their losses and create a lot of value for the industry in Ontario and the rest of Canada," says Richard Preiss, co-founder of Escarment Laboratories.





Creating unique products

To stay competitive internationally, the craft beer sector must develop and offer unique, hard-to-duplicate products. This partnership will increase the profitability of several components in the craft brewing value chain.

How?

- Creating a competitive advantage for Ontario craft beer through the use of novel regional yeast strains
- Expanding sour beer production in Ontario
- Breeding stress-tolerant beer yeast strains for enhanced fermentation capacity and product consistency

Focus ON: Ontario's Agricultural Research Centres

Ontario Crops Research Centre – Bradford



The Ontario Crops Research Centre in Bradford occupies the Holland Marsh, a 2,833-hectare site about 50 kilometres north of Toronto near the intersection of Highways 400 and 9. This region is the largest area of organic (muck) soil developed for agriculture in the province and one of the most intensive areas of agricultural production in the country. This research site is the only one in Ontario dedicated to research on muck soil.

This site includes a plant pathology lab; greenhouses with computer-monitored environment and ebb and flow benches to water and fertilize seedlings, cold storage for onions and carrots, and several areas for field research. Research trials take place on four hectares of organic soil research plots as well as 2.5 hectares of organic soil rented from a

local grower (located in another area of the marsh). Field trials are also conducted in commercial vegetable fields in cooperation with local growers.



Research at the Ontario Crops Research Centre – Bradford

Research focuses on the vegetable crops grown in the region's unique muck soil (average 60 to 70 per cent organic matter), especially onions, carrots, lettuce, celery and Asian vegetables.

Research includes insect and disease management and resistance, biological control, production, plant nutrition (fertilizers), human nutritional value, and screening and showcasing of new crops.

See current research studies and recently published papers on the [Ontario Crops Research Centre – Bradford website](#).

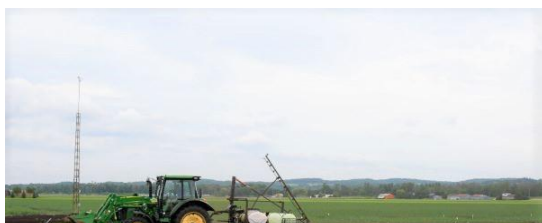
Current research studies include:

Management of clubroot on canola and brassica vegetables in Ontario (Dr. Mary Ruth McDonald)

- Objective: To determine the distribution and pathotypes (subspecies) of clubroot in cabbage and canola fields across Ontario. Subsequently, cabbage and canola cultivars in Ontario will be screened for resistance to specific pathotypes; best management practices to reduce clubroot potency will be evaluated; and effective treatment methods for small infestations will be developed.

Improved integrated pest management of *Stemphylium* leaf blight and other foliar diseases of onions

- Read about PhD candidate Sara Stricker's work on this project [in this article](#) from September 2020 and in her [3-minute thesis video](#), for which she recently won fourth place in the provincial competition.





Extension and industry collaboration

Staff and researchers collaborate with Canadian and international seed companies, the crop protection industry, plant breeders and other scientists.

These projects include variety trials and disease screening. Trials conducted for the crop protection industry and the minor use program of Agriculture and Agri-Food Canada are important for future registration of pesticides and biopesticides. Fertilizer industry companies use the research site for objective trials and for grower demonstrations. Researchers have also worked with Environment Canada on atmospheric/pesticide research, the University of Toronto on soil samples and York Region. Collaborations also include OMAFRA extension and research staff.

Staff and researchers also:

- Conduct cost recovery trials to evaluate new cultivars and crop protection materials
- Provide an integrated pest management service for local growers, allowing research results to be immediately put into practice (undergraduate students are trained as pest management “scouts”)
- Provide twice-weekly updates on the risks of pests and diseases to help ensure sustainable production
- Are actively involved in the annual Muck Vegetable Growers Conference and an annual Grower Field Day – Variety Trials showcase

Training the next generation of agricultural experts

Graduate students in Masters and PhD programs who have conducted research at the Ontario Crops Research Centre site in Bradford have gone on to work in the agricultural industry. “We are not only helping the agricultural industry with our research projects each year, but also helping to ensure there are strong qualified personnel for the future for the industry as a whole,” says station manager Shawn Janse.

Media

A selection of Alliance people, places and programs cited in popular and trade media

[Episode 18 of the How and Why Podcast \(Ontario Agricultural College\): How do your onions grow?](#)

PhD candidate Sara Stricker explains how her research on *Stemphylium* leaf blight, which took place at the Ontario Crops Research Centre – Bradford, is protecting Ontario’s onions. Sara explains why onions are such a valuable crop, why they need to be protected and how it’s done. Read about her commitment to communication and knowledge extension on the Ontario Agricultural College’s website: [Students improving life: Using communication to increase scientific understanding.](#)

Neonic soil treatment hurts ground-nesting bees, 1st of its kind study finds

(CBC News, March 6)

Dr. Susan Willis Chan, a post-doc in the School of Environmental Sciences (SES), and Dr. Nigel Raine, holder of the Rebanks Family Chair in Pollinator Conservation in SES, conducted the study with funding from the Alliance from 2015-2018. The Canadian Press reported on the research, with articles appearing in several newspapers and websites.

U of G researchers design program to improve farmers' mental health

(CBC News, March 10)

Pandemic adds to pressure for farmers (Chatham Daily News, March 15)

Additional coverage of the Ontario roll-out of the "In the Know" mental health program.

Events



Pathways to Commercialization: Spotlighting Successes from the Gryphon's LAAIR Program

Save the date for a virtual research forum presented by the Ontario Agri-Food Innovation Alliance, profiling innovative technology and commercialization activities funded through the [Gryphon's LAAIR program](#). On May 4 from 9 to 11:30 a.m., U of G researchers and key industry partners will be sharing how they took their projects from research to commercialization. Registration and speaker information is coming soon.

Research Innovation Festival to highlight Gryphon's LAAIR impact

Get a first look at promising agri-tech concepts emerging from U of G. From May 10 to 14 the Research Innovation Office will release five 2021 Gryphon's LAAIR value proposition pitches, plus stories and videos about U of G innovations, including those that showcase the impact of [Gryphon's LAAIR funding](#). The festival culminates in a live Gryphon's LAAIR pitch competition, when a [team of international judges](#) will decide which contestant will win \$10,000.

Royal Agricultural Virtual Experience (RAVE) continues

Visit the RAVE website for new content added this spring, or watch the U of G presentations on [YouTube](#), including: "[Preserving and Researching Ontario's Agricultural Histories with Diaries](#)" with Dr. Catharine Wilson; "[Using Social Media to Predict Food-Borne Illnesses](#)" with Dr. Rozita Dara and Dr. Jeff Farber; and "[Healthy Soil for a Healthy Climate](#)", a panel discussion with Dr. Claudia Wagner-Riddle and farmer Brett Israel.

[Visit the virtual Royal >](#)

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