THE GROWER

JANUARY 2019 CELEBRATING 140 YEARS AS CANADA'S PREMIER HORTICULTURAL PUBLICATION THEGROWER.ORG

MEN IN MOTION

The changing context of leadership

Head down and always in perpetual motion, Tom Heeman is a study in leadership. His humility and team approach are on full view on a sunny June morning near Thorndale, Ontario. That's where he's field manager for seasonal workers who harvest 40 acres of traditional June and day-neutral strawberries for the family business, Heeman Greenhouses and Strawberry Farm. Photos by Glenn Lowson.

KAREN DAVIDSON

Not yet 30, Tom Heeman is a man on a mission. He's president of the Berry Growers of Ontario while fulfilling the same role for the North American Strawberry Growers (NASGA). How does he do it? And why?

"We need to be on the global stage to be in the game," claims Heeman, field and strategic projects manager for the family business, Heeman's Berries. "That's actually common for a lot of horticultural crops."

Heeman's perspective comes from a family background where the day has no boundaries between life and business. Pleasure is business. Life is passion for business.

Absorbing family values

As he was growing up near Thorndale, Ontario, it was quite common to discuss the strawberry and greenhouse operation with his parents Rudy and Florence at the supper table along with siblings Will, Katie and Bridget. His father Rudy was president of NASGA in 2005/2006. Most memorable were the holidays tacked on to business trips to California, Florida and North Carolina.

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AT PRESS TIME...

Canada's Agriculture Day is February 12

This year's theme for Canada's Agriculture Day is "The Future of Food." The conference is expected to attract a who's who of the industry to network and hear a stellar line-up of speakers.

Here's an abbreviated list:

- Oleen Smethurst, assistant vice president/GMM, Buying & Operations - Produce, Costco Wholesale Canada
- David Coletto, marketing research leader, expert on millennials
- Sarah Davis, president, Loblaws Companies Limited
- Sonya McCullum Roberts, president - Growth Ventures and Strategic Pricing, Cargill Proteins
- Jill Harvie, public & stakeholder engagement manager, Canadian Cattlemen's Association

The conference will be held at the Delta Hotel Ottawa City Centre, Ottawa, Ontario. To register, go here: https://bit.ly/2Laji2Y

Oleen Smethurst visits with grape grower John Thwaites (middle) and a seasonal worker.

Registration open for OFVGA AGM

Mark your calendar for Feb. 19, 2019 in Niagara Falls. That's the date the Ontario Fruit and Vegetable Growers' Association (OFVGA) holds its annual general meeting, and there's lots on the agenda that's top-of-mind for growers. Consider the latest information about labour practices, safety nets, crop protection and more.

Confirmed guest speakers are Rebecca Lee, executive director, Canadian Horticultural Council and Fred Webber and Anne Fowlie, Dispute Resolution Corporation.

Early bird registration at $150/person ends January 20th. After that date, the price is $175/person. For details, go to www.ofvga.org/2019-agm

A special invitation is extended to past-presidents to celebrate 160 years at the annual general meeting, the Chair's Cocktail Reception & Banquet Dinner and after-banquet event "Industry Pub Night." For details, contact Deanna Hutton at dhutton@ofvga.org or call 519-763-6160 x 116 by January 28th, 2019 to confirm your attendance.

A block of rooms has been reserved at Sheraton on the Falls until January 28th.

See you at the Falls!

Update on ferbam, thiram, ziram

The Pest Management Regulatory Agency (PMRA) announced its final decisions for ferbam, thiram, and ziram fungicides on December 14. All uses of ferbam and ziram have been cancelled in these decisions. For thiram, all foliar uses have also been cancelled. Most uses of thiram-based seed treatments for vegetables will remain registered with a few exceptions based on product formulation or application method. All uses that have been cancelled as a result of these decisions are proposed for a three-year phase out and therefore will no longer be registered for use by growers as of December 14th, 2021.

For more information, Chris Duyvelshoff, OFVGA crop protection advisor, recommends the following PMRA publications:

Ferbam:
https://bit.ly/2URGMhO
Thiram:
https://bit.ly/2QYMwXX
Ziram:
https://bit.ly/2R1VoMu

NEWSMAKERS

Best wishes to **Glen Squirrell**, retiring as chair of the Ontario Potato Board after 10 years of devoted leadership. He was congratulated by incoming chair **Shawn Brenn**, Brenn B Farms, Waterdown at the December 5 annual general meeting. The 2019 board consists of: **Harry Bradley**, vice-chair; and directors **Jamie Lundy**; **Bert Tupling**; **Brad Blizman** and **Glen Squirrell**.

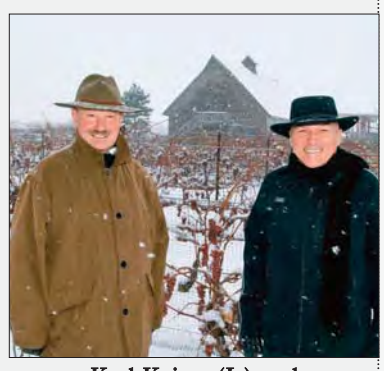
L-R: Shawn Brenn, Glen Squirrell

Welcome to **Stefan Larrass** who will be starting January 14 as senior policy advisor Labour Issues Coordinating Committee/ policy advisor, Ontario Fruit and Vegetable Growers' Association. Since 2015, he has been with Ontario Pork in the role of senior policy advisor working on issues such as safety nets, labour, the environment and climate change. From 2008 to 2014, he was a policy analyst and advisor for the Ontario Ministry of Agriculture, Food and Rural Affairs. After immigrating from Germany in 1996, he spent his first few summers working on a mixed strawberry, raspberry and apple farm in Ridgeville, Ontario. To tap into his broad experience, he can be reached at slarrass@ofvga.org.

Congratulations to Ontario fruit and vegetable growers **Alex and Jordan McKay** on winning the Outstanding Young Farmer 2018 Competition in Winnipeg along with cattle farmers **Jinel and Craig Ference**, Double F Farms, Kirriemuir, Alberta. The brothers operate a diverse berry and vegetable operation called Willowtree Farms near Port Perry.

The Ontario Processing Vegetable Growers have announced three new directors joining the provincial board. They include: **Ken Hamm**, Leamington; **Michael Denys**, Wallaceburg; **Carl Merrick**, Strathroy. **Henry Voth**, St. Thomas was acclaimed. Eighty processing tomato growers had a good 2018 season, with second-best volumes of the last six years. The annual conference will be held January 30-31 in London, Ontario.

Canadian wine icons, **Karl Kaiser and Donald Ziraldo** have been honoured with the first Lifetime Achievement Award ever presented by the Ontario Chamber of Commerce. Kaiser passed in November 2017.



Karl Kaiser (L) and Donald Ziraldo

The annual general meeting of CanAgPlus, the administrators of the CanadaGAP program was held December 6. The new chair is **Stephanie Lariviere**, Ontario Greenhouse Vegetable Growers/Erie James Ltd; vice-chair is **Scott Wright**, Star Produce. They are joined by directors **Jody Mott**, Holland Marsh Growers' Association; **Cathy McKay**, Nature's Bounty; **Alvin Keenan**, Rollo Bay Holdings; **Mike Furi**, Federated Co-operatives Ltd., **Robert Allard**, Pommes Philip Cassidy; **Keith Kuhl**, Southern Potato Company. Thanks are extended to outgoing chair **Jack Bates** and vice-chair **Hugh Bowman** for their contributions.

Stephanie Lariviere

The annual general meeting of Fresh Vegetable Growers of Ontario was held December 13. Chair is **Tom Miedema** and is joined by directors **John Hambly**, **Hank Droogendyk**, **Mark Wales**, **Don Almas, Ken Collins, Jason Verkaik, John Beardsley, Kees de Dreu, Mark Srokosz.**

Ontario Apple Growers has elected its 2019 executive. Chair **Charles Stevens** is joined by vice-chair **Cathy McKay**. Directors include **Keith Wright**, **Brian Rideout, Robert Geier, Joe Van de Gevel, Brian Gilroy, Greg Ardiel, Spencer Johnson, Art Moyer**.

COVER STORY

The changing context of leadership

It's not yet 8 am but Tom Heeman (R) and his older brother Will are loading freshly picked strawberries into bread racks. Both are graduates of the Advanced Agricultural Leadership Program.

Continued from page 1

Right now, he's figuring out how to adopt some of the growing techniques that he observed in the Netherlands and Belgium on a November 2018 tour organized by NASGA.

"This organization (NASGA) has helped us put our best foot forward in terms of production technology," says Heeman, referring to the home farm. "We now produce more berries per acre on 20 acres of day-neutrals, than our 20 acres of fruiting June strawberries. In Ontario, we are early adopters of technology – we're not always cutting edge, but when systems are validated, we are able to ramp up quickly."

It was tough to get away from the farm for the international trip. But time management is one of Heeman's strong suits. Whatever he pledges to do is a laser-cut building block. Consider his timeline. After high school, he chose an unconventional track pursuing the International Development Stream at the University of Guelph. He earned a Bachelor of Arts Honours degree with a minor in agricultural sciences. Graduating in 2014, he had already completed field studies in Brazil, Costa Rica and Haiti.

Interspersed with these courses were many trips to the United States for in-field exploring. As Heeman shares, it was an important base for understanding the value chain. "It may seem simple, but it's complicated in reality," says Heeman.

Out of all these experiences, Heeman has distilled a perspective that's resonating with his peers.

"You need to have some humility in order to make improvements in your life," says Heeman. "Let others give you a frank assessment. And above all, recognize that you need partnerships to leverage your skills and take you to the next level. You can't be all places at one time. It's of mutual value to grow the pie."

Some of his philosophy also evolved out of his participation in Class 16 of the Advanced Agricultural Leadership Program (AALP). Since 1984, the Rural Ontario Institute has graduated 475 agricultural leaders in an intense 18-month executive leadership program. Cut to its essentials, the program offers eight seminars across Ontario, lasting from two to four days. One is always held in Ottawa. A two-week North American study tour is a highlight, but the much-anticipated trip is a two-week international tour. Destinations change with each class.

Learning listening skills

Gabrielle Ferguson has been leadership programs director, Rural Ontario Institute, since September 2018. She is currently on a listening tour across Ontario to ferret out the future of the AALP, an enduring program in the psyche of Ontario agriculture. The program deserves celebrating for its consistency and renewal in generating high-calibre leaders who have gone on to business, community and industry success.

"One of the important questions to ask is: who am I and how do I dovetail into the people around me," she says. "Self-awareness and self-discovery are important elements of leadership."

This is a central concept of emotional intelligence (EQ) which is the ability to recognize, understand and manage our own emotions. To excel, it's the ability to influence the emotions of others.

"The program's strength is its diverse leaders meeting and talking together," she says. "The participants range from farmers to bankers to media to lawyers to ag retailers. And sometimes people wear multiple hats. As diverse as they are, they all have connections to agriculture and rural communities."

It's no accident that good leaders are good listeners. Taking time to breathe and listening are a skill set difficult to develop and maintain, especially in an era of multi-channel communication. The speed of social media, along with 24/7 news channels, reduce complex issues into sound bites. These disruptors trigger emotion-based responses. Quite often, these responses are defensive and not tuned in to audience needs.

Too often, farmers are responding from a position of defensiveness and conflict, says Ferguson. It's a result of not listening to or understanding the audience. Instead, she counsels a position of listening to the needs whether that's a consumer's hunger for convenience, health or saving the planet. More often than not, there is common ground in working together on those needs.

One of the AALP graduates, Henriet DeBruin, has worked on those skills and built a vegetable greenhouse business with her husband at Slate River, Ontario. Describing herself as a connector, she walks the talk in terms of involvement within the Ontario Federation of Agriculture as well as the Thunder Bay and Area Food Strategy.

"The rural-urban divide is challenging," she says. "People are quick to complain but not to take action. I don't have all the answers, but the first thing is to build a trust relationship. It's difficult to do any leadership without trust, commitment and time."

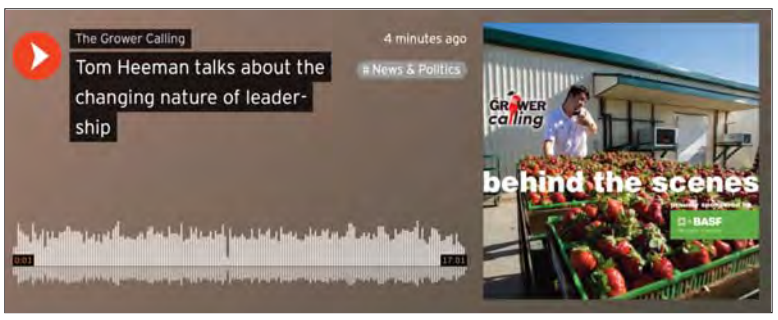
Tapping a network

"You need to be authentic," says Ferguson. Ask yourself what you believe in. When you understand yourself and experiences, then you understand how you came to have your beliefs."

With those core beliefs, leaders such as Tom Heeman are acting in different ways. They are not necessarily doing all the talking. In fact, their strengths are in listening and connecting a diverse group of players to get the job done.

BEHIND THE SCENES PODCAST

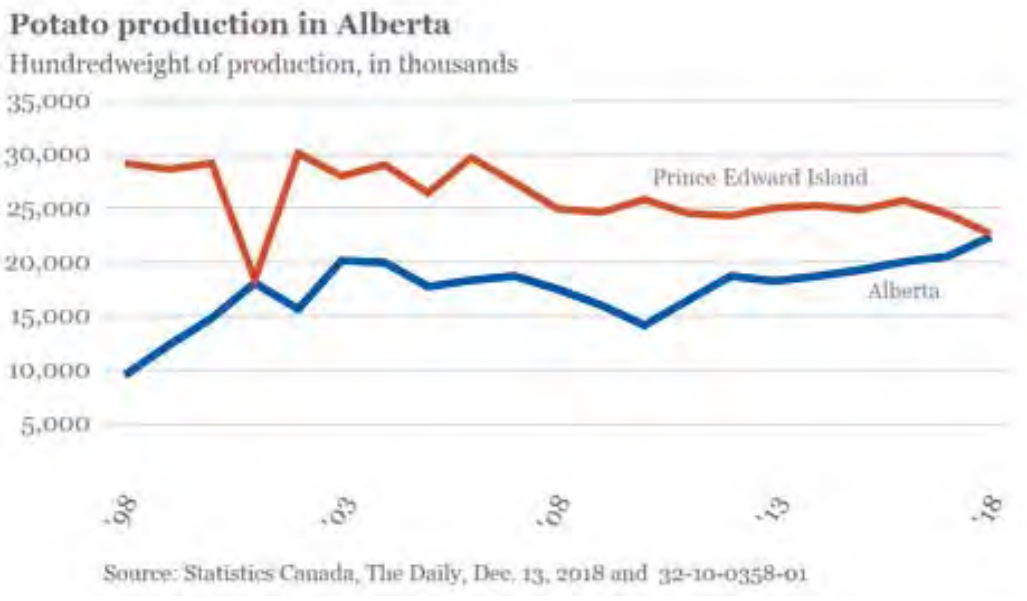
Karen Davidson, editor of The Grower, goes 'Behind the Scenes' of this cover story and speaks with Tom Heeman. Tom shares his insights on agricultural leadership today, involving more women on boards of directors and reaching out to the value chain. To listen, visit www.thegrower.org/podcasts



CROSS COUNTRY DIGEST

ALBERTA

Alberta and Prince Edward Island converge in potato production



Prince Edward Island has long held the title of largest potato producer in Canada. It even inspired a song by the great Stompin' Tom Connors called Bud the Spud. But the island province with its signature red soil now has to share the crown with a sister province out west.

Alberta's potato production grew again in 2018, and is now virtually tied with P.E.I. at more than 2.23 billion pounds. The chart above shows production in both provinces over the last 20 years. Alberta's production is up 132 per cent while P.E.I.'s is down 18 per cent.

The other potato producing provinces, Manitoba and New Brunswick, produced 2.0 billion and 1.6 billion pounds in 2018, respectively. While Alberta's average yield in 2018 was 416 cwt/acre, Manitoba's was 345.2 cwt/acre.

The burgeoning production of potatoes in Alberta demonstrates growing economic diversity in the province. Along with a few other notable crops (particularly cannabis), Alberta's agriculture and agri-food industry continues to perform well. This is especially welcome news against the backdrop of an energy sector that continues to struggle.

Production of vegetables, including potatoes, is likely to expand in 2019 and beyond. Investments in new food manufacturing facilities, such as the new Cavendish Farms processing plant in Lethbridge that's expected to be completed by the fall of 2019, will encourage more production.

Source: ATB Financial's Economics + Research Team December 17, 2018 news posting.

Potato Growers of Alberta 2019 board

Back L-R: Michel Camps, Jeff Ekkel, JP Claassen, Lyndon Nakamura. Front L-R: Tony Bos, Russ Van Boom, James Bareman

Russ Van Boom, Board Chairman – Northbank Potato Farms Ltd.
Michel Camps, Vice Chairman - CP Farms Ltd.
Lyndon Nakamura – Nakamura Farms Ltd.
Tony Bos – Boston Farms Ltd.
Jeff Ekkel – Sunnycrest Seed Potatoes Inc.
James Bareman – Bareman Farms
JP Claassen – Prairie Spud Farms

MANITOBA

McCain Foods to upgrade potato processing plants

McCain Foods is committing $75 million for two Manitoba potato processing plants at Carberry and Portage la Prairie.

A company news release says that $45 million is earmarked for the Portage la Prairie facility for the purchase of a new high-efficiency potato sorting system, "cutting edge" processing and packaging equipment and new onsite waste water processing. The facility's heating and cooling equipment will be upgraded to improve the plant's environmental footprint and multiple trucks will be able to unload at once.

The Carberry facility will receive $30 million for the installation of auto sampling equipment, a blanching system, improved heating and refrigeration systems for the whole facility and other upgrades.

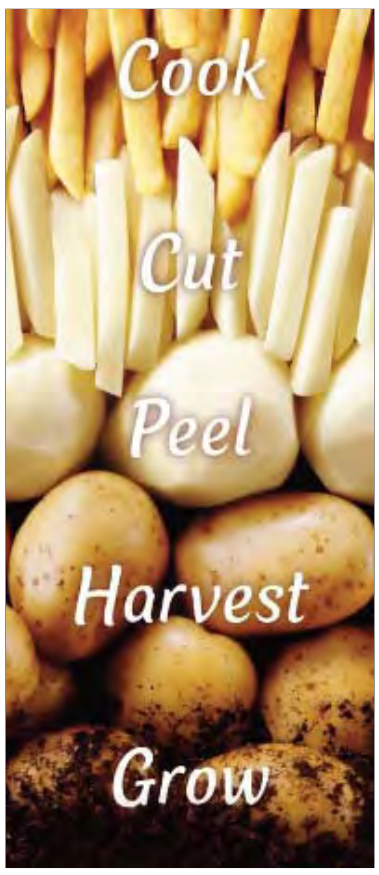
The investment is a result of demand for frozen and speciality products in retail and food service.

The heartening news comes after a tough 2018 harvest that left 5,200 acres unharvested. Manitoba's Keystone Potato Producers' Association (KPPA) president Chad Berry said that while the company's investment won't fix the season's harvest woes, growers are encouraged for 2019.

Dan Sawatzky, general manager, KPPA, confirms that Manitoba's unharvested crop is valued at about $21 million. Coming out of the association's annual general meeting on December 11, he said that seed growers estimate a "tight market for 2019 but that the marketplace will be covered."

While 2018 has been a hiccup, Manitoba growers plan long-term. New construction projects or equipment purchases may be delayed, however the investments in processing plants for 2019 are encouraging.

"Growers are excited about the opportunities," says Sawatzky. "They will figure out how to make it work."



CROSS COUNTRY DIGEST

NOVA SCOTIA

Proteins could help the apple industry extend the shelf life of premium apples

Two superstar apple varieties, Honeycrisp and Ambrosia, are a hit with consumers because of their superior quality in taste, firmness and appearance. Apple growers and packers charge a premium price for these varieties and use advanced storage technologies to ensure these high-demand varieties are available to consumers virtually year-round.

In prime condition, these apples are near perfect but keeping them that way requires a delicate balance of storage techniques. Storing them at a low temperature too early after harvest can cause a physiological disorder called soft scald. It causes the delicate skin and underlying flesh on these apples to develop brown or black lesions which makes them unmarketable.

The Honeycrisp and Ambrosia varieties are known among growers and packers for having a sensitivity to this disorder and scientists are intent on identifying the biological triggers that cause it. A study on the post-harvest storage of Ambrosia apples at three commercial orchards in British Columbia led researchers at Agriculture and Agri-Food Canada and Dalhousie University to discover a group of proteins they believe hold the key to helping the industry maintain the quality of these apples while in storage.

"We know there's a relationship between this particular group of proteins and the development of soft scald disorder under cold stress in storage," says Dr. Jun Song, research scientist, Agriculture and Agri-Food Canada (AAFC), Kentville Research and Development Centre. "Now we're validating our findings to determine if these proteins can be used as biological markers for detection, prevention and monitoring."

The goal of this research is to help the apple industry in Canada improve storage techniques to reduce losses and expand market potential.

"We don't know which orchard blocks of 'Ambrosia' apples are susceptible to soft scald in some years and which others are not, however, after they are placed into storage the symptoms develop and that can lead to significant losses," says Dr. Peter Toivonen, research scientist AAFC, Summerland Research and Development Centre. "It would be extremely useful to be able determine the level of susceptibility so that susceptible fruit could be treated before storage to mitigate soft scald in those lots."

The next step is to validate the group of proteins as markers for the disorder. From there, detection tools can be developed to help growers and packers become more effective at reducing or eliminating the presence of soft scald disorder while in storage.

Photo right: Ambrosia apple varieties. The apples in the top half of the photo are healthy. The apples in the bottom half show symptoms of soft scald disorder.

Source: Agriculture and Agri-Food Canada

CANADIAN HORTICULTURAL COUNCIL

Canada's updated food guide needs to recognize the value of pure fruit juice

Representatives of the Canadian Horticultural Council recently sat down with the Honourable Ginette Petitpas Taylor, Minister of Health to thank her for speaking at Fall Harvest 2018. They also brought forward three advocacy priorities.

1. **Canada's updated food guide needs to recognize the value of pure fruit juice:** The previous food guide included 100 per cent pure fruit juice as a means for Canadians to help meet their daily recommended intake of fruit and vegetables. Health Canada has indicated it would be removing this recommendation, and go as far as putting fruit juice in the "items to avoid" category. Pure fruit juice is a convenient and affordable alternative to fresh fruit consumption. Discouraging the consumption of this juice will negatively impact consumers, as well as the farmers who sell their lesser-graded produce (that would otherwise go to waste) to juice manufacturers.

2. **The Pest Management Regulatory Agency (PMRA) needs more resources:** The PMRA is hindered by a lack of resources and scientific data as it tries to meet its mandate of regulating pesticides. Pest outbreaks require a full toolbox to be addressed effectively, but growers are being asked to do more with less, as numerous crop protection products are being cancelled despite no effective alternatives being available.

3. **The PMRA's mandate should be updated to include economic considerations:** When making regulatory decisions, the PMRA should consider the potential economic impact to Canada's farmers. Without access to effective pest control tools, Canadian fruit and vegetable farmers will not be able to grow abundant, quality, safe food for consumers, having a direct impact on food security within Canada. Furthermore, Canadian farmers are facing competitive disadvantages with imported produce grown by farmers that continue to have access to a more expansive suite of pest control tools. This has a direct impact on the sustainability of Canadian farmers and their ability to contribute to employment and the economy.

CHC met with Canada's Minister of Health, the Hon. Ginette Petitpas Taylor, to discuss Canada's Food Guide and the need for more resources at the Pest Management Regulatory Agency. From left to right: Rebecca Lee, CHC executive director; the Hon. Ginette Petitpas Taylor, Minister of Health; Brian Gilroy, CHC president; Robyn McKee, CHC policy manager; and Caleigh Irwin, CHC crop protection manager.

The meeting with the Minister was brief yet productive. In addition to the above-mentioned points, representatives were also able to relay concerns about the need for better communication between industry, the Canadian Food Inspection Agency (CFIA), the Public Health Agency of Canada (PHAC) in resolving food recall issues due to food-borne illnesses. It became very clear in recent food recalls and public health notices that PHAC was not considering how its messaging can negatively impact the Canadian produce industry – from farmers to retailers, particularly when the culprit is imported food. While CHC is thankful to have had the opportunity to provide feedback and receive updates, PHAC must work with industry partners and CFIA more strategically to ensure continued public trust in Canada's food supply and in its farmers who adhere to strict traceability and internationally-recognized food safety requirements.

OFVGA ISSUES AND ACTIVITIES

It all boils down to competitiveness

GORDON STOCK
SENIOR POLICY ADVISOR & GOVERNMENT RELATIONS, OFVGA

This column is to keep you informed about the key issues that OFVGA is tackling on behalf of Ontario's fruit and vegetable farmers.

Environment and conservation

The provincial government announced its new made-in-Ontario environment and conservation plan on November 29. Consultation on the strategy is open until January 28, 2019. OFVGA is reviewing the plan and a submission expressing the need to ensure the competitiveness of fruit and vegetable production while supporting environmental protections will be developed. The plan generally aims to reduce waste, support good environmental actors and being harsher on polluters. With respect to agriculture, it mentions the opportunity for using soils as a carbon sink and to continue support for improving agriculture's resiliency to climate change.

Crop protection

OFVGA continues to work closely with industry, the Mancozeb Taskforce and the Pest Management Regulatory Agency (PMRA) to ensure the maximum uses for mancozeb are maintained as the PMRA works toward its final re-evaluation decision. A letter-writing campaign targeting the federal government has been initiated to demonstrate the importance of mancozeb to the competitiveness of fruit and vegetable production. A template for the letter campaign can be requested from the OFVGA.

As the PMRA works through a review of its re-evaluation processes, a productive meeting was held in early December with broad representation from the Ontario horticultural sector. PMRA facilitated discussions to gather feedback on process improvement to address a backlog of re-evaluations and limited resources. Once finalized, changes could be implemented as early as the first half of 2019.

Labour

OFVGA was pleased with the Ontario government's passing of Bill 47, Making Ontario Open for Business Act, which makes changes to Ontario's labour legislation, including pausing minimum wage at $14/hour until October 2020. Bill 47 reverses much of what was implemented in Bill 148, which was introduced by the previous government in 2017. While the changes are positive, OFVGA continues to convey to government that the increase to $14 has been a burden on farmers and continued support is needed to adjust.

Bill 66, Restoring Ontario's Competitiveness Act, 2018

Bill 66 was introduced on December 6, 2018 and represents amendments to acts involving a dozen ministries, and is intended to increase the competitiveness of doing business in Ontario. Under the Ministry of Agriculture, Food and Rural Affairs, changes are proposed to the Agricultural Employees Protection Act, Farm Registration and Farm Organizations Funding Act, and the Ministry of Agriculture, Food and Rural Affairs Act. Changes are also proposed under the Ministry of Labour's Employment Standards Act. Proposed changes appear to be intended to create efficiencies for government and business, consistent with the government's commitment to reduce red tape. OFVGA will be reviewing and commenting on proposed changes that impact the fruit and vegetable sector.

Ontario fall fiscal update

The provincial government's fall fiscal update mentioned the creation of an agricultural taskforce by the Ontario Ministry of Agriculture, Food and Rural Affairs. Members of the advisory group will provide input to the government on key policies and issues that impact the industry. At press time December 19, the government announced that the Minister's Advisory Committee will be chaired by Randy Pettapiece, parliamentary assistant to the Minister of Agriculture, Food and Rural Affairs. The three vice-chairs are: Keith Currie, president of the Ontario Federation of Agriculture; Norm Beal, CEO, Food and Beverage Ontario; Dave Buttenham, CEO, Ontario Agri-Business Association.

Meetings with the Official Opposition

OFVGA representatives spent a day in November meeting with members of Ontario's Official Opposition. Meetings with MPP Vanthof (agriculture critic), MPP Sattler (economic development critic), MPP West (labour critic) and MPP French (infrastructure critic) allowed OFVGA representatives to educate and have productive dialogue with the MPPs on competitiveness issues faced by the fruit and vegetable sector, including carbon pricing, minimum wage, the Northern Fruit and Vegetable Program, the government's approach to enforcement/inspection and red tape.

The OFVGA continues to convey to government that the increase to $14 per hour has been a burden on farmers and continued support is needed to adjust. Photo by Glenn Lowson.

Federal fall economic statement

The federal government's 2018 economic statement announced a number of measures to support increased business investment and export activities. These measures include benefits to the agriculture and agri-food sector. A summary note is available on the OFVGA website describing the changes to capital cost allowance deductions for businesses, which are meant to encourage capital investments, particularly for food processing equipment and clean technologies.

For more information on any industry issues, please contact Gordon Stock, senior policy and government relations advisor, at gstock@ofvga.org or 519-763-6160, ext. 125. More detailed updates can also be found at www.ofvga.org/news.

CHAIR'S PERSPECTIVE

Is our food safe?

JAN VANDERHOUT
CHAIR, OFVGA

As communications improve, consumers have access to more information than anyone would have imagined possible even 10 years ago. This is a good thing when it comes to nutritional facts or the benefits of eating certain foods, but how about when there is a food safety outbreak. At what point does it become too much information?

Two recent food-borne illness issues from contaminated produce have made the headlines, or at least they were screaming in my ear! The first one was a *Salmonella* outbreak in western North America centralized in Washington State. It was suspected and announced that it may have been linked to English cucumbers. I never heard that this was confirmed as more than a possible link to cucumbers. Thankfully the issue has been resolved and there is no longer a looming concern about cucumbers.

The second outbreak was *E.coli 0157* in romaine lettuce beginning in the first week of October and apparently ending early December. There were 27 cases under investigation in Canada for this outbreak and all cases were in the last three weeks of October. The do-not-eat advisory was implemented on Nov 21 at which time 18 had been affected and six had been hospitalized.The last nine cases also occurred in October but were not on the list till after the advisory was lifted on Nov. 27th when it was announced that romaine grown in the areas potentially affecting the lettuce was not entering Canada. As of Dec. 6, there were 52 cases in the U.S. linked to romaine.

When you look at this on a timeline you quickly spot the gaps. The advisory was not announced until three weeks after the last case occurred. There would have been millions of dollars' worth of romaine either taken to the dump or worked into the soil and millions of heads of lettuce without a market to absorb the unwanted production. Caesar salads were unavailable in most restaurants. Demand for other lettuces and lettuce prices skyrocketed. To what end? Even in early December romaine producers were uncertain about what will happen to the crop in their fields and are, of course, worrying about the impact this will have on their financial statements. Should romaine be planted for 2019 production? What have we gained?

It is very difficult to establish the appropriate action in cases like this, but we must recognize that times have changed. Because of modern-day communications, outbreaks like this can become very public very quickly and can be blown out of proportion equally fast. This seemed like a major outbreak but, only 52 cases in 12 states of the U.S. were identified. How many sports-related injuries occurred in this same period? Or how many hospitalizations related to leisure activities?

Certainly, I am not denying the importance of food safety. In fact, our farm is committed to maintaining the safest product possible. New employees are trained before they start work, and refresher sessions are done regularly. The facility is checked daily and all observations recorded. Crates and product handling equipment are cleaned and tested weekly. Strict pest control guidelines are followed both on the crop and everywhere in the buildings. Application rates of everything that could affect product quality or safety is calculated and recorded. Product is clearly labeled to ensure traceability. Audits are completed at the required intervals. This is a lot of effort and at significant cost. Canadian growers are subject to these food safety requirements but when some people get sick possibly from eating romaine grown in the western U.S. then Canadian growers also suffer the consequences, often for months to come.

Sometimes we joke about our four-inch food safety binder which contains the pages of food safety protocols and records ensuring our produce is as safe as it can be. We grin and bear the extra audit imposed by the Canadian Food Inspection Agency (CFIA) even though it seems entirely redundant. We need some market security in return! This autumn's romaine issue was after the completion of our domestic season but the outbreak in the spring had a serious effect on Canadian producers simply because consumers are afraid after following the sensationalism of news releases.

Growers need to demand a more appropriate response to these types of food-borne illnesses. The traceability processes in place in Canada should make identifying the source of the outbreaks straight forward. Tracing the issue back to a farm or packing house should be attainable. Entire industries and thousands of people's livelihoods should not be affected like this. Most importantly, these food-borne illnesses need to be traced back quickly to prevent more people from becoming sick. The whole process needs to be reviewed to save lives, jobs, economic activity and the food that often goes to waste. When CFIA and Center for Disease Control (CDC) overstate the concern of food-borne illness after the fact instead of digging down to the source of the problem, it does nothing to help the issue and puts farmers at financial risk. Who pays for this?

I hope that CFIA and CDC can put their organizations to work on finding a more sustainable solution to food-borne illness. We need a solution where growers with good food safety systems are not penalized because of the poor performance in some small corner of the food chain. We need a solution that identifies the source in a timely manner and does not need to shut down the entire supply chain after the fact. Growers who work hard to produce safe, healthy food have a right to a better food safety framework that does not put everyone's business at risk whenever there is an outbreak somewhere on the continent. There needs to be a certain amount of market access granted by the work we growers do for food safety.

WEATHER VANE

Mike Pohorly (left) and Frank Pohorly, Riverbend Farms, bundle up for the ice wine grape harvest near Niagara-on-the-Lake, Ontario. Photo courtesy of Grape Growers of Ontario.

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THE GROWER

URBAN COWBOY

Next-generation protein: agriculture's story of the year

OWEN ROBERTS
U OF GUELPH

As we sat at the dinner table enjoying chicken masala, somehow the conversation rolled around to protein alternatives and cultured meat – you know, the kind that uses a few meat cells as a starter, like making bread from yeast.

My wife and I reacted strongly, and negatively, to the thought of it. Why eat meat from the likes of a petri dish, when Canadian farmers produce some of the best livestock on the entire planet? And let's not forget the role of animal agriculture in replenishing soil with natural nutrients. There are reasons livestock production is entrenched in our society and in our farming culture.

But my 14-year-old stepson Emmitt had a different take on it. He's not vegetarian or vegan, but he heartily endorses the idea of animals not being used for food.

For him, it's an ethical choice. The weird-science, test-tube baby era had concluded by the time he was old enough to make informed food choices. His whole life has involved technology such as computers and cell phones. No blurred lines exist for him between human life in a test tube and cultured cells for food, because he wasn't part of an earlier science revolution.

So maybe I shouldn't be too surprised at his approach to such foods. A generation ago, my own parents would have turned up their noses at something as exotic (for south-western Ontario palates) as chicken masala.

Yet for meat, they would think nothing of eating wild duck or muskrat, or sometimes even road-killed rabbit if it was still warm. We grew up in the country and my dad was a conservation officer. Dinner was much different than it is now.

My stepson hasn't had those same low-tech experiences. So cultured meat, while new, is just like anything else that's new. It's not gross or revolting. It's simply something that can take its place among the hundreds and hundreds of other food choices available to him every day.

And when I took a closer look at the chicken masala we were eating, it occurred to me that it indeed could be cultured meat, or something made to appear as meat. Covered in sauce, it's unlikely I would have known whether it was raised on a farm or made in a factory. I'd like to think I have enough culinary savvy to distinguish between the two, but I don't know for sure.

I do know, though, that if there's a market for cultured meat, researchers and companies' product development specialists will continue to make it taste better and work on its nutrition and texture profile.

After all, look what's happening with other meat alternatives. After years of trying, product developers have finally figured out how to make vegetarian fare taste and feel like meat. Clearly, the public has an appetite for such products, as shown by A&W's ultra-popular Beyond Meat burger. It's not made from cultured cells, but it's also not made from an animal. And to some people, like my stepson, that's important.

Traditional meat processors have started investing in alternative protein companies. Like the Big Three automakers that are closing factories producing conventionally powered vehicles in favour of new technology, meat companies know the tide is turning towards alternatives.

And to me, all this makes the movement towards cultured meat and protein alternatives 2018's top agricultural story of the year. The implications are huge for farmers and rural Ontario itself of an upcoming generation of consumers that is perfectly fine with a meal of cultured or alternative protein.

Farmers know how to grow protein sources such as legumes and vegetables. But they don't know how to make cells grow in a lab-like setting. At least, not yet.

And they worry when the public points a finger at their operations and shouts "factory farm." But isn't cultured food grown in a lab-like setting kind of like a factory?

FARM AND FOOD CARE

Speaking up for agriculture in Ontario

KELLY DAYNARD

In Ontario, it's been 30 years since an alliance of farm leaders of commodity groups representing field crop and horticultural farmers created AGCare – Agricultural Groups Concerned About Resources and the Environment. Simultaneously, major livestock commodity groups and related agri-businesses came together to form the Ontario Farm Animal Council (OFAC) – both taking a collective approach to raising awareness about issues of interest to Ontario consumers. Those two groups later worked together on shared projects for years before merging in 2011 to become Farm & Food Care.

Promoting responsible farm practices and demonstrating openness with the public while offering effective and credible communication are the pillars on which both AGCare and OFAC were built. Since then, similar groups have been developed in Saskatchewan and Prince Edward Island, with discussions now taking place in other provinces. In each case, the sectors work together to provide sources of timely, credible information about farm environmentalism, animal care, and food production. This coalition approach is now something that Canadian farmers take for granted – and it definitely works.

Decades ago, there wasn't a need for groups such as Farm & Food Care. In 1931, one in three Canadians lived on a farm. Today, it's about one in 50, with most Canadians now four or more generations removed from farming ancestors.

We know, through surveys done by the Canadian Centre for Food Integrity, that a whopping 97 per cent of Canadians agree that they know little or nothing about modern farming practices. Yet almost two-thirds say that they'd like to know more. This represents a great opportunity for farmers and others working in agriculture to share their stories with the consuming public - Everyone in this industry can help to address misconceptions held by the people who rely on our home-grown products.

Of course these numbers also represent a challenge. Most consumers don't know where to go for information about food and farming – with many relying on social media "experts" to answer their questions. They don't understand science and studies. They love plants and the concept of growing food for their families – but struggle to find the common ground between the few herbs they're growing on their apartment balconies and the acres of fruits and vegetables that our growers are working hard to produce. They also understandably don't want to buy food that makes them feel guilty – which means fear-based marketing campaigns work. Gluten-free, GMO-free labelled bottles of water are actually a thing – and they sell.

It's important to remember that farmers have a strong voice. In those same studies, the majority of non-farming Canadians felt that farmers are part of our country's culture, are an important contributor to the economy and do a good job of providing food at reasonable prices.

What all of these numbers mean, is that everyone has to do their part to communicate about their livelihoods.

First, you need to ensure that your own farm (or orchard or processing plant) is in order, so to speak. You should never have anything that you wouldn't easily be able to defend if it appeared on the front page of the local newspaper. We're all judged by the worst participants in an industry – so we all have a role to play in improving and promoting responsible farm stewardship.

Second, farmers need to speak up, correct misinformation and invest in the collective efforts of the industry. In only a few minutes a day, you can help make a difference by speaking up for food and farming. This could be as simple as joining in on a conversation at church on Sunday, standing in the aisle of a grocery store talking to a stranger about locally grown food, or correcting erroneous information being cited as fact at a dinner party.

This involvement could also take the form of a quick email or letter to the editor to correct inaccurate information in an earlier issue of the paper, or making a call to a phone-in radio show if it's a topic that you can help to explain.

In the last decade, we're also seeing farmers turn to forms of social media – such as Twitter or Facebook – to tell their stories. While we realize that this isn't for everyone, an increasing number of farmers are seeing social media as a way to connect with consumers, promote their products or share their thoughts with the 98 per cent of Canadians who aren't directly involved with food production – it's an exciting concept.

And we at Farm & Food Care are so grateful for the masses of farmer volunteers who show up to our events to meet consumers. This past year, we've hosted farm tours for 200 urban food influencers in the Toronto, Ottawa and Peterborough areas, visiting 13 farms and food processing facilities. We've hosted Breakfast on the Farm events in Hamilton and Ottawa for 4,000 urban guests and we talked to thousands of commuters coming through Union Station in October as part of an Ontario Agriculture Week activation. Without exception, each call for volunteers brought a great response and each event gave the farmers who participated the chance to engage with the Ontarians buying our products.

Your commitment to sharing your food and farming story doesn't have to be big, but every little bit counts. Consider this: if 50 farmers each spent only 10 minutes a day for five days per week talking about what they do, that adds up to an impressive 2,500 minutes. The average employee working a seven and a half hour day five days a week racks up only 2,250 minutes. This means 2,500 minutes of communicating and 50 credible sources speaking out about how they grow and produce our food. The reach is significant.

If you're interested in learning more about how to be a good spokesperson for agriculture, visit Farm & Food Care's website at www.FarmFoodCareON.org and click on the Resources link. There, you'll find lots of tips on how to help get the message out, including how to run a farm tour, make a presentation or write a letter to the editor. Sign up for our newsletter (also on the Farm & Food Care website) to be kept current on activities we're hosting in your area – and events for which we would welcome your help.

We hope you'll accept the challenge – we all have a role to play in being a good ambassador for agriculture.

Kelly Daynard is executive director, Farm & Food Care.

COMING EVENTS 2019

Jan 3-4	Southwest Agricultural Conference, "The Road Ahead," University of Guelph Ridgetown Campus, Ridgetown, ON
Jan 9-10	NPC Potato Expo, Austin, TX
Jan 15	Safe Food for Canadians Regulations come into force
Jan 24	Apple Growers of Quebec Annual General Meeting, Plaza Rive-sud, La Prairie, QC
Jan 24-26	Pacific Agriculture Show, Tradex Exhibition Centre, Abbotsford, BC
Jan 24-27	38th Annual Guelph Organic Conference, Guelph University Centre, Guelph, ON www.guelphorganicconf.ca
Jan 29-30	Nova Scotia Fruit Growers' Association Annual General Meeting, Old Orchard Inn, Greenwich, NS
Jan 29-31	Manitoba Potato Production Days, Keystone Centre, Brandon, MB
Jan 29-31	Mid-Atlantic Fruit & Vegetable Convention, Hershey Lodge and Convention Center, Hershey, PA
Jan 30-31	Ontario Processing Vegetable Growers' Industry Conference, Four Points by Sheraton Hotel, London, ON
Feb 3-6	North American Strawberry Growers' Association< Orlando, FL

RETAIL NAVIGATOR

Winnipeg is home to more than half of Manitoba's population

PETER CHAPMAN

Last month we explored the province of Ontario with Canada's largest population that includes a very dense urban core. This month we will move to the prairies, where we have big open spaces and population spread across smaller cities and towns.

In Manitoba, Winnipeg is home to more than 50 per cent of the population. The next largest population centre Brandon, has less than five per cent of Manitoba residents. This widely dispersed population poses a challenge for food retailers. It is expensive to distribute product and operate larger numbers of smaller volume stores. We are all familiar with the decline in the small stores servicing smaller communities. People in Manitoba have certainly experienced this change to the retail landscape. In the following table we illustrate the top five cities and towns in Manitoba in table 1.

Manitoba has a diverse population. According to Stats Canada we see a number of areas where Manitoba over indexes compared to the Canadian population. Table 2 illustrates the mother tongue.

Some of the diversity is evident in the vibrant restaurant community in Winnipeg. There are many great places to eat and the variety is very good for a city of this size. Consumers are exposed to many different foods and tastes and then they want to try them at home. This can be an opportunity for producers.

Customers influence the buying decision

All of the large food retailers have a presence in Manitoba, except Metro.

Sobeys has been restructuring its business nationally and Manitoba has experienced changes as well. Sobeys and Safeway stores both operate in the province. The company also supplies some IGA stores and managers have indicated they plan to bring FreshCo to the western provinces to give them an option in the discount segment of the market.

Loblaw operates Real Canadian Superstores in Manitoba and they also supply the Extra Foods and No Frills banners. Previously, Loblaw operated Western Canada from Calgary but now it is all operated from the store support centre in Brampton, Ontario.

Walmart has continued to expand the number of Supercenters in the province. Walmart operates the Manitoba stores from its national office in Mississauga, however as in many Walmart markets, stores do have some autonomy to ensure they meet the needs of consumers in the market.

Costco has three warehouses in Manitoba. The Manitoba Costco stores are operated out of the Burnaby, B.C. Costco office. These warehouses offer similar assortments to warehouses in other regions.

Co op stores continue to have a presence in Manitoba. Supplied by Federated Co op, they have recently been renovating stores in Winnipeg. With some good urban locations and newer models they can compete better with the larger national chains. Co op continue to be locally owned and support local products and initiatives.

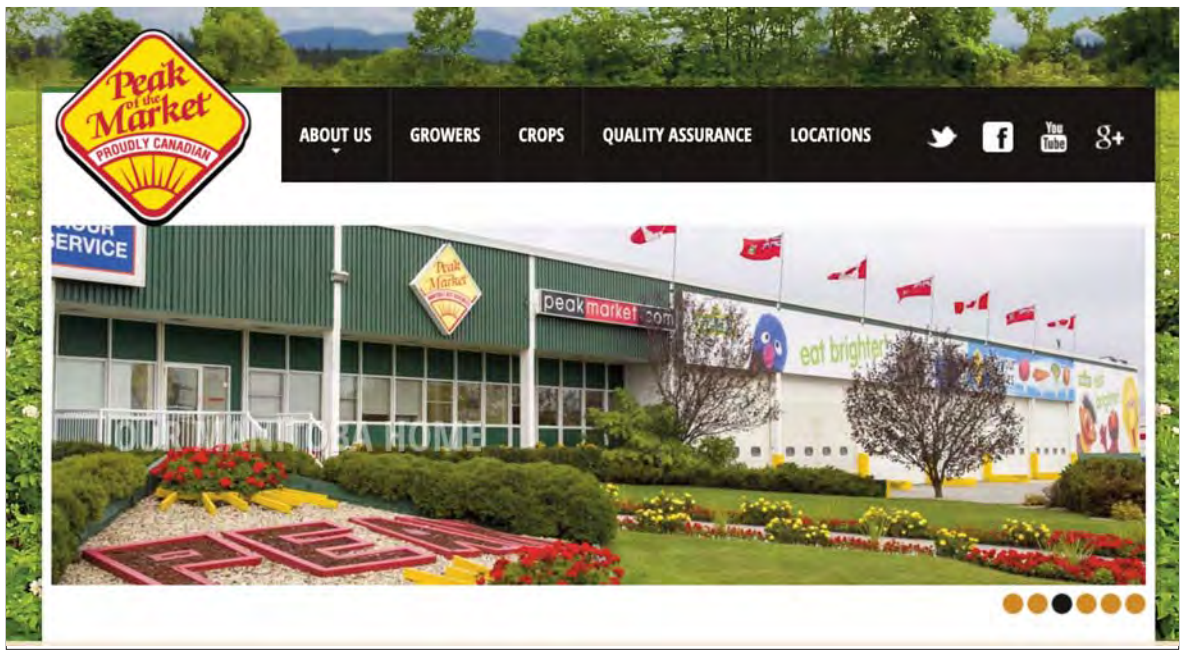
Recently, Overwaitea has expanded into Manitoba with three stores in Winnipeg. The stores are similar to the Save On Foods stores in other markets. It is a conventional store offering with more focus on local.

Your competition

Manitoba is unique in that vegetables produced on any farm larger than one acre, must be sold through the Manitoba Producers' Vegetable Marketing Board, otherwise known as Peak of the Market. This method of consolidating products was legislated in 1942.

The legislation was passed to provide producers with one place to market their products and avoid the price competition between producers that can drive selling prices down.

The Peak of the Market website states this is a "grower owned, 'not for profit' vegetable supplier and operates in Manitoba under the Farm Products Marketing Act." The website also states that produce is sold across North America and occasionally into Asia, Europe, Latin America and the Caribbean.



The following commodities are available through Peak of the Market: asparagus, onions, carrots, parsnips, beets, red potatoes, broccoli, russet potatoes, cabbage, yellow potatoes, cauliflower, rutabagas, cucumbers, summer squash, green peppers, winter squash.

The Manitoba market

Manitoba offers consumers modern stores as we have seen many stores renovated recently in Winnipeg. The challenge of servicing population spread across sizeable geography is still the biggest challenge.
If you have any questions about selling your products or developing strategies for specific customers please give me a call at (902) 489-2900 or send me an email at peter@skufood.com.

WHAT'S IN STORE?

When was the last time you said "Thanks"?

Recently I had some printing done at Staples. I picked up the box filled with the SKUFood C.A.R.T. process and when I opened it there was a note inside. Just a brief card to say "Thank you for your business." Inside, the person who had done the printing work had signed it and written that my business was appreciated. It does not always cost a lot more to do the little things that make a difference. When was the last time you thanked your customer or the people who work in the stores and merchandise your products?

Table 1: Top five cities and towns in Manitoba

Statistics Canada-Manitoba population 2016 census	
	Population
Winnipeg	705,244
Brandon	58,003
Steinbach	15,829
Thompson	13,678
Portage le Prairie	13,304
Total Manitoba	**1,278,365**

Table 2: Mother tongue

% Total Canadian population Statistics Canada 2016	
Manitoba	3.6%
Aboriginal languages	15.5%
Filipino	11.2%
Germanic	12.2%

Peter Chapman is a retail consultant, professional speaker and the author of A la Cart-A suppliers' guide to retailer's priorities. Peter is based in Halifax N.S. where he is the principal at GPS Business Solutions and a partner in SKUfood.com, an on line resource for food producers. Peter works with producers and processors to help them navigate through the retail environment with the ultimate goal to get more of their items in the shopping cart. peter@skufood.com

MAKING MOVES

Less than truckload

JENNIFER MORRIS

It is more and more common that customers request several pallets a couple times a week rather than a full load of product once every couple weeks. Product is fresher for better end-user experience as well as space is saved with leaner inventory.

There are benefits for both shipper and receiver to use Less than Truckload (LTL) transportation.

What is it?

LTL stands for Less Than Truckload, or in even more simple terms, not enough product to fill a truck whether by weight or space. Typically there are carriers that specialize in this type of business as they need to have a lot of smaller shipments to make up one shipment.

Advantages

• *Cost-Effective* - the most straight forward of advantages: cost. Contracting a full truck to ship less than a truckload of product increases cost per case which can eat into or eliminate profits on that shipment. Sending that product with other shippers' product going to the same area can greatly decrease your cost per case to almost the same as filling a truck.

• *Effective Inventory Control* - for those receiving product, managing inventory and space can be a challenge. If it is possible to bring in only what is needed to fulfill orders and keep production running smoothly, a lot of time and headaches can be saved.

Disadvantages

• *Increased Logistics Planning* - due to LTL being more complicated than a full truckload, there is more time and planning that goes into this. If you have a good carrier partner you will not have to worry about this much. But be aware that it will reflect in a slight charge.

Increased risk of Product

• *Damage or Loss* - since product is moving on and off the trailer more than once, typically at a terminal where the product is re-organized for appropriate deliveries, there is increased risk of damage or even product being misplaced.

• *Increased Shipping Times* - because of all the additional stops and possible re-arrangement at a terminal, the shipping times can be up to twice or three times as long than a dedicated truck.

• *Possible Delays* - if your product is crossing a border, LTL can have a lot of delays; instead of one clearance there are multiples on a truck. There is always a chance that something may not clear as quickly as your product and in turn will cause delays.

Working together for success

As weird as it sounds, this is a time to embrace your neighbours and "competitors" alike. Odds are that if during a particular season you are shipping a few pallets to Florida, for example, so are other people in your area. Some people have concerns about having their product on a truck with others, but most of the time those concerns are baseless. Working together can help everyone be successful and decrease rates as you are not competing over full trucks that cannot be filled anyway.

Temperature-controlled items

The characteristics that make LTL so great are also the reason that it makes things complicated. Blending together multiple companies freight seamlessly is challenging to begin with, but add in a temperature requirement and you have compounded an already complex load. Typically LTL carriers run three temperatures; frozen (approx. -10°F), fresh (approx. 34°F) and ambient.

If your freight requires temperatures outside these options, you have a few courses of action. First, you can use wrapping or blankets to protect your product from chill -- usually effective on short runs, typically under two days. Second, as stated above, look to businesses in your area that you can partner with. It will take more work but you will ensure that you get to dictate the temperature of the trailer.

Cost structures

LTL is costed out mostly by weight. The heavier your product the more you are paying, however, should you have product that is irregularly shaped or packaged, costs will be affected. Also be aware that different types of product will cost more. Should something be more volatile or sensitive, the charges will be higher. Location will also play a role in the rate. If you are in a high traffic area, such as warehouse areas near an airport, cost will be more economical than if you were in a small town that is not near anything else.

For details on possible additional fees, go to www.thegrower.org/authors

FOCUS: GRAPES, BERRIES AND VINEYARDS

Reducing incidence of grape viruses is top priority for new national network

KAREN DAVIDSON

What is the cost of plant viruses in vineyards across Canada? It's tough to tally a number, but Hans Buchler has observed first-hand the devastation of grapevines infected with leafroll virus and red blotch disease in British Columbia. In the last five years, about a thousand acres per year are being planted or replanted to keep up with the high demand for BC-grown grapes in locally made wines.

As the chair of the Canadian Grapevine Certification Network (CGCN), he's leading the charge for a sustainable supply of certified propagation grapevine material. He's joined by vice-chair Bill Schenck, Ontario; secretary Robert Prange, Nova Scotia, treasurer Matthias Oppenlaender, Ontario and directors Louis Thomas, Quebec and Howard Soon, British Columbia. This is the organization incorporated in February 2017 to lead a new Canadian Grape and Wine Science Cluster which was officially funded with $8.4 million by the federal agriculture ministry in the summer of 2018.

The strategy to contain grape viruses is three-fold. First, inhibit virus spread through best management practices in vineyards. Identify infected material through cost-effective testing and remove the material from the vineyard. And lastly, develop protocols for clean plant propagation.

At Brock University, a new low-cost, virus testing laboratory operated by Cool Climate and Oenology Viticulture Institute (CCOVI) will offer timely and highly accurate results. World-class virologist Dr. Sudarsana Poojari supervises this laboratory which is capable of processing around 2000 samples per month.

Viruses have been a major topic of concern right across Canada. CCOVI director Debbie Inglis has observed the need for a decade. She recalls the seeds of a national research network starting in 2008 while she and Pat Bowen, AAFC scientist from Summerland, BC, were serving as elected co-chairs of the technical committee of the National Wine Sector Research Advisory Council (NWSRAC). Building on the NWSRAC national strategy for grape and wine, a collaboration between the country's two largest grape and wine research centres, CCOVI and AAFC's Summerland Research and Development Centre (SRDC), was forged.

"This collaboration really allowed us to tackle issues of national importance," Inglis said. "Working together allowed us to use the same methods, share technologies and establish the same systems in both research centres to build research capacity in these fields."

"Having a national network recognizes the value of sharing expertise," said Bowen. "It allows our two well-established centers (CCOVI and SRDC) to take our expertise outside British Columbia and Ontario and help emerging areas.

While the issue of viruses may not be well understood outside agriculture, that is about to change. The United Nations has declared 2020 to be the International Year of Plant Health. The campaign will complete a decade of focus on biodiversity.

Grape leafroll disease.

FOCUS: GRAPES, VINEYARDS AND BERRIES

An award-winning grape grower shares his vineyard practices

Albrecht Seeger has won the prestigious Cuvée Vineyard of Excellence Award twice. In 2018, he won for a block of Pinot noir. Here, he is pictured in a block of Chardonnay near Niagara-on-the-Lake, Ontario. Photo by Glenn Lowson.

KAREN DAVIDSON

Pinot noir did not live up to its reputation as the heartbreak grape when Albrecht Seeger won the BASF-sponsored Cuvée Vineyard of Excellence Award with a block of this varietal a year ago. Instead, he received heartfelt accolades from his peers.

As a multi-generation grape grower – going back to his motherland of Germany – Seeger stewards 175 acres of vineyard near Niagara-on-the-Lake, Ontario. Attention to detail on a daily basis is one of Seeger's strengths.

"Seeger vineyards have been known for excellence in Canadian viticulture for decades and it is still evident to this day when we visited the award-winning Pinot noir block during the evaluation process," recalls one of the competition's judges, Dr. Jim Willwerth, viticulturist at the Cool Climate and Oenology Viticulture Institute.

Started in 2009, this competition operates with a detailed evaluation process conducted by four expert judges who visit the site on at least two occasions during the growing season. They score the vineyard on criteria such as soil management, pest and disease management, canopy management, innovation practices and overall vineyard quality. At harvest, fruit samples are collected and additional fruit quality assessments are performed. A combination of both vineyard scores and fruit quality parameters ultimately decide the winner.

Seeger shares some of the vineyard practices that enabled him to grow *V. vinifera* grapes successfully for decades and has earned him respect. Canopy management is important, especially growing Pinot noir. In early to mid-June, the leaves are hand-stripped around grape bunches as soon as flowering has finished. This allows crop protection sprays to reach the grape clusters for protection against downy and powdery mildew as well as botrytis. At this early stage of development, the bunches must also receive as much sunlight as possible. Seeger says this practice has carry-over benefits to the fall to ensure clean fruit and maximize fruit development. It's important that the grapes develop as much colour as possible and reach high brix levels.

Optimizing the grapevine canopy is critical for ultra-premium grape production. As the grape shoots are growing at eight to 10 inches, Seeger instructs his crew to tuck the canopy into the catch wire so that they are reaching upwards and not flopping over.

"I want to maximize the leaf area to harvest as much sunlight as possible," says Seeger.

His trellis system consists of two canes tied to the fruiting wire at 90° angles with spacing of 8' x 3'. For Pinot noir, Seeger aims to harvest three kilograms of grapes per plant with 1,600 plants per acre.

Throughout the summer, constant monitoring for disease and pest pressure is needed on almost a daily basis. Riding the spray tractor or an ATV, Seeger is always observing and evaluating. Grape berry moth is the most prevalent and threatening pest. The first generation can be expected before bloom. The second generation is usually observed when the grape berries are pea-sized. The third generation can attack at the time of veraison.

Seeger uses sticky traps with a pheromone dispenser to identify the appearance of berry moth. His tolerance level for this pest is zero. "I want to keep the vineyard as clean as possible," says Seeger. "If you get a second generation of this pest, then the problem can snowball."

Another important practice is hedging the vineyard a couple times during the summer to keep grapevines in check. Once the shoots have reached the height of the trellis system, Seeger wants sunlight energy directed into the grape clusters, not more leaves.

A couple weeks before harvest, his crew walks the vineyard cutting out any grape bunches that have not turned colour. He aims to cull out clusters that might be susceptible to breakdown. Any sight of ladybugs at this time is a prompt for a spray to avoid taint in the grape juice.

"Timing is everything," Seeger concludes. He's had lots of practice. 2019 represents the 40th year that Albrecht Seeger has grown grapes in Ontario.

CCOVI research vineyards to tackle climate change challenges

BRITT DIXON

Grapevines have been planted in two new CCOVI research vineyards for a clone and rootstock evaluation program.

With the help of two new research vineyards, Brock University's Cool Climate Oenology and Viticulture Institute (CCOVI) is looking to aid Canada's grape growers and wineries.

Grape grower Bill Schenck's donated two acres of land for CCOVI to use for vineyard research. The project is funded through an NSERC CRD program in partnership with Ontario Grape and Wine Research Inc.

CCOVI partnered with two commercial grape growers to plant the St. Catharines and Niagara-on-the-Lake vineyards that will be used for a clone and rootstock evaluation program of the main VQA grapevine varieties in Ontario.

Jim Willwerth, CCOVI Senior Scientist, said the program takes a proactive approach that will help the industry grow and adapt to challenges expected with climate change.

"We are looking at cold hardiness, fruit composition, wine quality and general vine performance, so that the industry knows the best combinations to use for our core grape varieties," said Willwerth.

Planting and management of the research vineyards was funded through the Natural Sciences and Engineering Research Council of Canada Collaborate Research and Development grant program in partnership with Ontario Grape and Wine Research Inc.

The certified grapevines were planted in June in collaboration with Huebel Grapes Estates and the support of grape growers Bill Schenck and Erwin Wiens, who each donated the use of two acres of their land. More vines will be planted in 2019.

"This is an example of an Industry and University research program that is ultimately looking to help the sustainability of the Ontario and Canadian grape and wine industry," said Willwerth. "I think this is proof of how CCOVI's industry partnerships really shine and how we work together to achieve a common goal."

One vineyard was planted on a heavier clay soil and the other on a sandy soil to represent different vineyard conditions found in Ontario. There are different varieties of vines in each with multiple clone and rootstock combinations.

"The research we do at CCOVI is driven by the industry, and the industry, at this time, is interested in evaluating clean plant material and looking at what combinations do the best under our conditions," Willwerth said.

Bill Schenck, one of the commercial vineyard owners, has been working with CCOVI on research projects for the past 15 years.

"The reason I like working with them on research projects is it gives me first-hand knowledge on what will work on my property," said Schenck. "I am pretty excited for opportunities to see what I can do better.

"We have seen over the years with different rootstocks that vines grow differently and so, if I look to replant or plant new vineyards, it is always better to have the knowledge available."

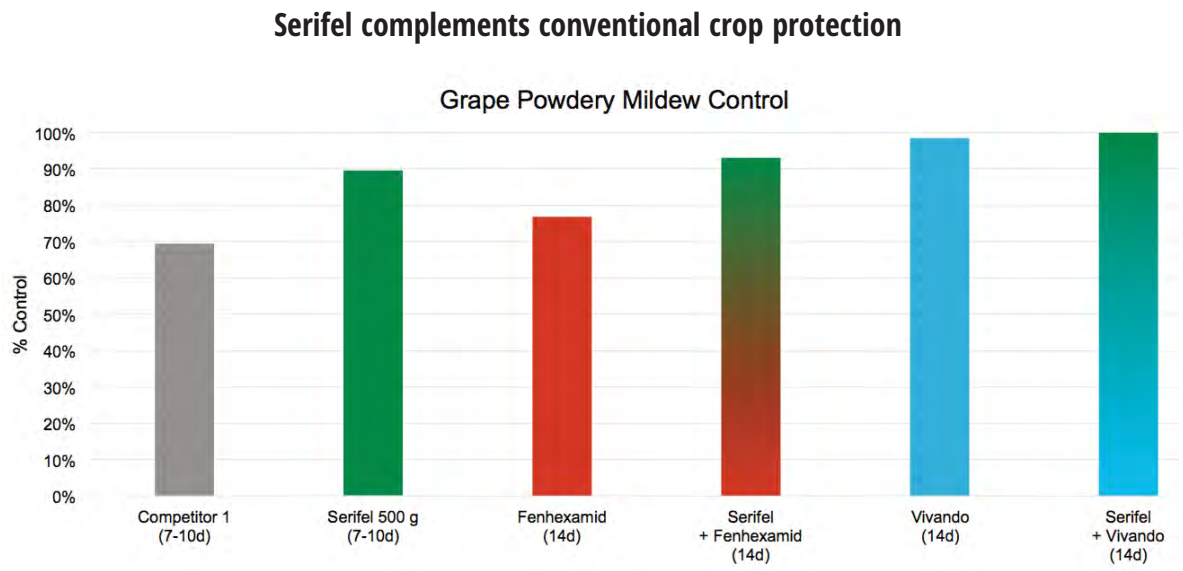
Schenck said he is happy to help support the industry by donating his land and time for the clone and rootstock evaluation program.

"I think the growers in this area are very lucky that CCOVI has taken up the challenge of trying to do what is best for the industry and I think they are covering off almost all aspects of it at this point."

Britt Dixon is communications officer, CCOVI.

FOCUS: GRAPES, VINEYARDS AND BERRIES

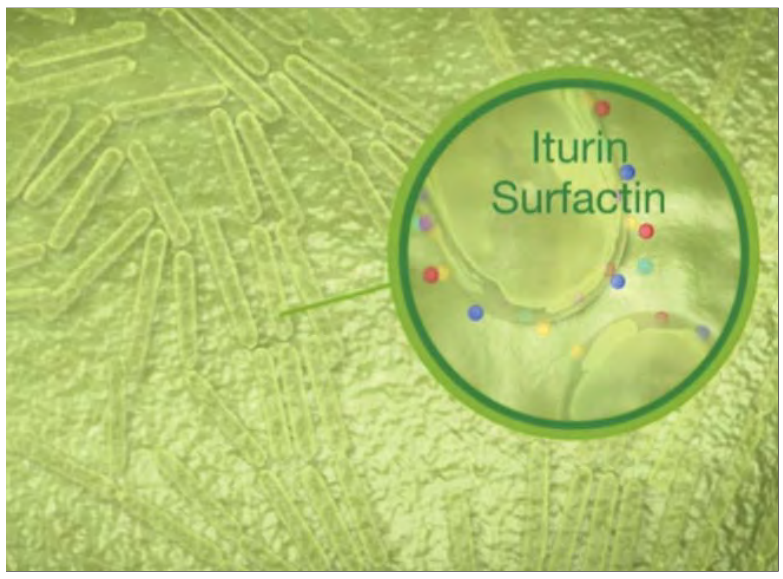
BASF launches first biological fungicide to suppress two major grape diseases

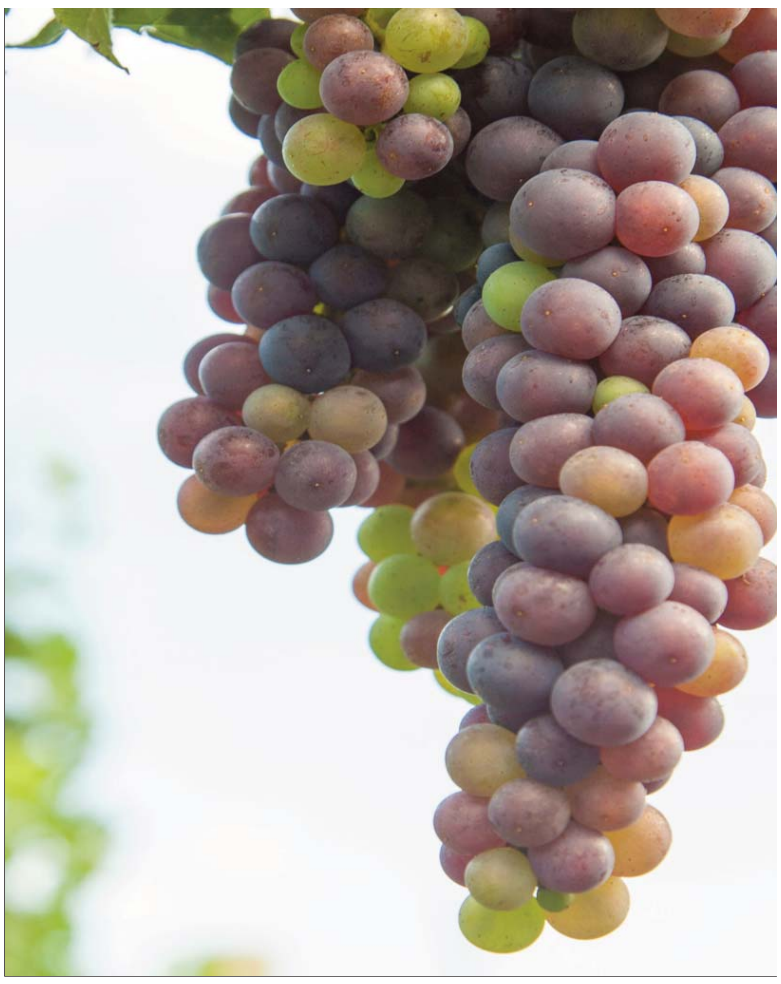


KAREN DAVIDSON

New product registrations are few and far between these days, so the launch of BASF's Serifel fungicide for the 2019 season is welcomed. Especially so, because the active ingredient, *Bacillus amyloliquefaciens* strain MBI600, suppresses powdery mildew and botrytis, the two most challenging diseases of grapes.

"Serifel is a biological fungicide, and it is BASF's first foliar-applied biological," explains Anne McRae, technical service specialist, insecticides and horticulture, BASF Canada. "There are a few biologicals on the market for organic growers, but this product is a first in that it also fits well in tank mixes with conventional fungicides. In fact, our Canadian research shows that Serifel gives the entire integrated disease management program a boost."





Bacillus amyloliqufaciens strain MBI600 is a spore-forming bacterium that colonizes the leaf surface of grapes. From there, it forms a defense against fungal pathogens. The breakthrough science is in formulating a product that has purity and potency to make a real difference in vineyards. Serifel has shown 70 to 80 per cent suppression of powdery mildew. Results are improved when Serifel has a tank mix partner, for the control of powdery mildew and botrytis.

Serifel comes in a powder formulation, containing live spores. This product can be combined with most conventional chemistries, including copper and sulphur, however McRae advises not to use Serifel with the EBDC fungicides.

"This product is very flexible," says McRae. "It can be used on a preventative, seven-day interval when powdery mildew pressure is lowest or as a tank-mix partner to enhance the performance of conventional powdery mildew or botrytis chemistries.

The pre-harvest interval is zero. The re-entry interval is four hours.

Serifel can be stored at room temperature. When mixing, BASF recommends growers create a slurry before adding it to the spray tank. "There is less foaming and clumping with this procedure," says McRae.
If possible, apply the product when no rain is in the forecast. Serifel has rainfastness of three hours. As the spores contact the grape leaves, they will begin to produce metabolites. One is called surfactin, which helps Serifel stick to the leaf. Another is called iturin, which fights fungal pathogens. One advantage of this product is that it is effective across a broad range of temperatures when fungal pathogens are most active and can even continue to work at temperatures up to 40°C.

For more information on how Serifel works, look to these introductory videos at AgSolutions.ca/Horticulture

Bringing European berry innovation back to Canada

ELISE JOHNSON

Micropropagation of blueberry plants at Schrijnwerkers in the Netherlands.

Bright and early on a November morning in Hertogenbosch (Den Bosch), Netherlands, a contingent of more than 60 Canadian and American berry growers and industry suppliers boarded a tour bus and hit the road on three-day trip across Northern Europe. The goal? Learn about the innovation underway in soft fruit cultivation and bring it back to Canada to enhance our berry growing industry.

The tour, organized by The North American Strawberry Growers Association (NASGA), took place on November 6 – 9, 2018 and focused on strawberries and other small fruit production and marketing activities across Belgium, the Netherlands and Germany. Twelve stops, three days and three countries. This wasn't a tour for the faint of heart.

"Farm after farm, we got a first-hand taste of new approaches to soft fruit cultivation that are increasing efficiency and labour, improving density and quality of berries and, of course, driving better bottom lines for growers," says Connie Bradt-Monsma, managing director of A.M.A. Horticulture Inc, who was on the tour. "Their entire berry industry – from supplier to propagator to grower – is working together to streamline and standardize processes to ultimately produce better fruit for better value."

So, how can these exciting and innovative approaches benefit Canadian growers? Here are a few trends that we think could be adapted.

Driving excellence through specialization

Don't be good at many things, be great at one thing. That's the philosophy taking root in Europe's berry industry. Specialist propagators and substrate specialists work alongside growers to ensure everyone is producing the highest quality product.

Propagation

The NASGA tour stopped at berry propagation farms, including Schrijnwerkers, which specializes in blueberry plants. Growers come to these experts with specific needs. In turn, the propagators produce healthier, more resilient plants.

This improves efficiencies for growers, who are able to focus their energy on bringing berries to maturity, harvesting and packing.

Substrates

The tour bus also stopped at BVB Substrates, the Dutch masters of berry substrate. BVB creates custom substrates that are designed to suit a grower's particular situation and growing conditions. They also use high quality products, such as perlite and block-cut peat (which can be cut into smaller fractions) that have high porosity and water retention. By collaborating with berry substrate specialists, growers can leave soil decisions in the hands of experts.

Driving efficiency through elevation and faster picking

Raised fields and elevated systems

Guests on the NASGA tour had the opportunity to see a variety of elevated growing systems. At some farms, growers are moving strawberry propagation from the ground to an elevated tray field with a mechanical watering system. Others were bringing berry growing into the greenhouse, using a raised gutter system.

No matter the method, getting berry growing off the ground is reducing labour and costs. Picking berries from the field is backbreaking work and raising the crop to chest level makes a significant difference. This method also helps to reduce diseases and pest pressures, and has been shown to improve yield.

At Frank van Alphen farms in the Netherlands, growers saw significant returns after building a new raised tray field for strawberry propagation.

Continued on next page

FOCUS: GRAPES, VINEYARDS AND BERRIES

Bringing European berry innovation back to Canada

They were able to grow "tight tray," increasing density from 400,000 plants per hectare to 700,000.

Multi-purpose picking cart

Berry pickers at Bonnacker farms in Nettetal, Germany are using a multi-purpose picking cart to weigh, grade, measure and pack the fruit all at once. A simple innovation, this is helping to reduce labour and costs by eliminating the steps involved in the picking and packing process. Another benefit is that strawberries only touch human hands once. This also helps to reduce bruising and ensures that markets are receiving high-quality berries.

The NASGA group learns about the value of perlite in custom substrates at BVB.

Hundreds of thousands of strawberry plants grown "tight tray" in the raised outdoor fields at Frank van Alphen Farms.

Stainless steel picking cart improves efficiency by enabling pickers to weigh, grade, measure and pack.

Standardized packaging formats, seen here at Cooperatie Hoogstraten, are saving time and money across the strawberry industry in Europe.

Driving savings through industry standardization

Standardization is one of the major innovations helping to reduce cost and efficiency across the industry. Strawberry containers going to retail markets are streamlined and standardized across Belgium, the Netherlands and Germany. Growers pack in 500-gram punnets with no tops or lids. This has a number of benefits. Berries breathe better, pickers can pack directly in the field, and growers see significant cost savings. Growers at Cooperatie Hoogstraten explained that the standard punnet containers reduce packing costs by 25 cents. This saves two euros on every crate of strawberries. And the crates are standardized, too. Every greenhouse working with Hoogstraten uses the same crate format and size when shipping their fruit to the market.

"The cross-section of Canadians and Americans on the tour was impressive. There were growers using a traditional method, growers moving into elevated systems, and people like us, looking to support them in trying new approaches," says Bradt-Monsma. "It was a long three days, but the energy and enthusiasm was high. We are all eager to bring this innovation home to grow our soft-fruit industry in North America."

The European berry tour is part of the NASGA's mission to spur innovation in strawberry cultivation in North America. On February 3-6, 2019, NASGA will host its 9th annual North American Strawberry Symposium in Orlando, Florida. The Symposium brings together members of the international strawberry community, including growers, researchers, and other industry members to advance the science, production and marketing of the berry industry here in North America.

Elise Johnson is manager, communications and marketing for A.M.A. Horticulture. All photos courtesy of A.M.A. Horticulture.

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Ontario Berry Grower

Ministry of Agriculture, Food and Rural Affairs

Ontario

Wild bee communities in summer raspberries

HANNAH FRASER

Bees rely on pollen and nectar, and are readily found on many flowers during the growing season. Raspberry flowers produce relatively high volumes of sugar rich nectar daily, and are visited by a large number of insects, including many wild bees. Although fruiting can be achieved through self-pollination, fruit set, quality and yield are increased in the presence of insect pollinators. Inadequate pollination results in small, misshapen berries. Some producers use managed bees to improve pollination success.

Surveys in other production regions highlight the important contributions made by wild bees in commercial raspberries, but there is little information on the diversity and abundance of native pollinators on this crop in Ontario, which is home to more than 400 species of wild bees.

This past summer, my student Eden Gerner conducted a preliminary study of floral visitors in summer raspberry in southern Ontario. She conducted timed counts of bees visiting flowers to track the abundance of honey bees and wild bees, as well as timed collections of wild bees as they landed on flowers. Collections of wild bees were done because identification of bees on the fly is difficult to do, and identification to genera or species requires analysis using a microscope.

Abundance counts of flower visitors to raspberry showed significantly higher honey bee abundance than wild bee abundance at two of five sites. Higher numbers of honeybees were expected at some sites due to the growers keeping honeybee hives for raspberry pollination; however, only one of these sites had higher levels of honeybees relative to wild bees.

A total of 23 wild bee species from 11 different families were captured as part of this survey. All of the sites we visited had high wild bee species diversity. Two genera of bees, *Andrena* spp. (mining bees) and *Ceratina* spp. (small horned carpenter bees) were the most abundant overall, but their composition varied by site. Two species of mining bees, *A. nuda* and *A. morrisonella*, were consistently found at all sites. Sites typically had a high diversity and abundance of small carpenter bees OR mining bees, but not usually both.

High abundances of *Ceratina* and *Andrena spp.* indicate that they are dominant pollinators in summer raspberries. Andrena spp., like most of the bees identified in this project, make their nests in the ground. They prefer sandy, loamy soil. In contrast, *Ceratina* spp. nest in pithy stems such as raspberry canes. The stems or twigs need to be broken in order for the bees to excavate the pith. With the exception of honey bees and bumble bees found in this project, all of the bees are solitary bees, meaning a single female establishes a nest and provisions the resulting brood.

Establishment of wild bees in raspberry can be encouraged in the crop and nearby areas by providing bare patches of ground for nesting, cane management (ie. not removing all dead canes), and ensuring additional flowering resources to provide pollen and nectar resources through the season.

To find out more about Eden's project, and the bees she found, make sure to visit the poster session at the OFVC 2019.

Hannah Fraser is OMAFRA's entomology program lead, horticulture.

Project summary: using genetic tests to confirm herbicide -resistant weeds in Ontario horticulture crops

KRISTEN OBEID

Horticulture cropping systems throughout Ontario have been surveyed to better characterize the occurrence and distribution of herbicide-resistant weeds. Herbicide- resistant weed populations must be detected and managed rapidly because, depending on species, they may quickly spread within the same field and to adjacent fields or farms. Additionally, because fewer herbicides are available for use in horticulture crops, resistance management can result in costly weeding practices such as hoeing and/or mowing.

Traditionally, to confirm resistance in a weed sample, researchers perform trials in a greenhouse, a process which can take as long as six months to complete.This project developed genetic tests that takes only a few days to run. These tests allow us to deliver a diagnostic and a recommendation to the grower within the same growing season.

Since 2016 a total of 37 new cases of herbicide resistance have been reported in horticulture crops in Ontario. Also, 12 quick genetic tests have been successfully developed, two of which are new discoveries. In 2018, these tests were shared with the MAPAQ (Ministère de l'Agriculture, de Pêcheries et de l'Alimentation du Québec) "Pest Diagnostic Lab" and made available to extension personel in Ontario and Quebec to submit samples as a pilot project, providing the diagnostic service to growers. Additional tests are developed as new samples are collected and submitted. Overall, 40 per cent of the submitted weed samples tested positive for herbicide resistance using molecular markers. The results from the molecular marker tests are also validated using the traditional greenhouse methods (dose response).

Early detection and rapid confirmation of resistant weeds will help growers:

1. Make informed management decisions and mitigate the risk of spreading herbicide-resistant weeds by managing them in season.
2. Provide proof that resistant weeds are present to obtain new minor use priorities and support from crop protection companies for new product registrations.

The pea / large crabgrass results are highlighted because these fields were sampled as part of a specific survey that did not sample based on suspected resistance. If these results are excluded, the percentage of positive resistant weed results increases to 73 per cent.

Crop	Weed	Herbicide Group	Total Fields	Positive Tests Results	%
Grape	Canada fleabane	G9	7	2	29
Pea	Large Crabgrass	G1	30	2	7
Potato	Lamb's-quarters	G5	3	2	67
Pumpkin	Pigweed species	G2	2	2	100
Pumpkin	Common ragweed	G2	2	2	100
Pumpkin	Canada fleabane	G9	2	2	100
Strawberry	Lamb's-quarters	G5	7	5	71
Strawberry	Canada fleabane	G9	1	1	100
Soybean	Waterhemp	G2	3	3	100
Soybean	Waterhemp	G9	3	3	100
Total			60	24	40%

Collaborators:

- Saint-Jean-sur-Richelieu Research and Development Centre: Dr. Marie Josée Simard, Dr. Martin Laforest
- Harrow Research and Development Centre: Dr. Robert Nurse, Dr. Eric Page
- Pest Management Centre: Dr. Cezarina Kora
- External Collaborator: Ms. Kristen Obeid (Ontario Ministry of Food and Rural Affairs)

This project was partly funded through the Pest Management Centre's Pesticide Risk Reduction Program.

Kristen Obeid is OMAFRA weed management specialist-horticulture.

ONTARIO BERRY NEWS

Don't miss these events for Ontario berry growers

Tuesday, February 19, 2019 – Embassy Suites, Niagara Falls

9:00 am	Introduction and Welcome	
9:10 am	Grower Profile, Ferme Horticole Gagnon	David Lemire, Ferme Horticole Gagnon. Trois-Rivières, QC
9:55 am	Comparing Alternative SWD Monitoring Techniques	Hannah Fraser & Erica Pate, OMAFRA
10:10 am	Biology and Management of Cyclamen Mite	Justin Renkema, AAFC
10:40 am	Crop Adapted Spraying in Bush Berries: A Highbush Blueberry Case Study	Jason Deveau, OMAFRA, and Brandon Falcon, Falcon Blueberries
11:25 am	BGO Berry Price Survey	Kevin Schooley, Berry Growers of Ontario
11:40	The Berry Outlook from a Retailers View	Pat Gilbert, Loblaw
12:15	Lunch	
	Marketing Track-	Production Track –
2:00 pm	Food Bloggers- Integrating Social Media and Traditional Media Outlets, Kelly Ward, Foodland Ontario	Advanced Berry Fertility, Friedhelm Hoffman, Lakeside Grain and Feed
2:30 pm	Agriloco- a Food Finding Service, Pete Fraser	Long Cane Raspberry Production- What Is It? Erica Pate, OMAFRA
3:00 pm	New Facebook Rules (to optimize reach), Kelly Ward, Foodland Ontario	Miscanthus, Switchgrass and Wheat Straw Comparison- Mahendra Thimmanagari, Erica Pate, OMAFRA
3:30 -5:00 pm	Round tables. NOTE: bring your own soil and tissue fertility tests for round table discussions on advanced berry fertility.	

Wednesday, February 20, 2019 – Scotiabank Convention Centre, Niagara Falls

9:30 am	Mustard as a Pre-plant Cover Crop	Charlie Gray, 4 Corners Farm
10:00 am	Labour Efficiency- Different Motivation and Remuneration Techniques	David Lemire, Jasmine Sauvé, Ferme Horticole Gagnon
10:30 am	Tips for delivering quality berries to buyers	Beth Mitcham, UC Davis
11:00 am	New Products for Berry Crop Protection	Syngenta, FMC, Biosafe, Bayer
11:45 - 2:00	Lunch and Visit the Trade Show	
2:00 pm	How to Give Your Transplants the Best Chance of Survival	Charles Keddy, C.O. Keddy Nursery Inc.
2:30 pm	Panel: Harvest Management & Logistics Charlie Gray, 4 Corners Farm, David Klyn-Hesselink, Fenwick Berry Farm, David VanDeVelde, Wholesome Pickins, Dusty Zamecnik, EZ Grow Farms	
3:30	Fitting New Herbicides Into Your Berry Weed Management Program	Kristen Obeid, OMAFRA

February is an exciting time for berry growers. The Berry Growers of Ontario annual meeting is coming up on Tuesday, February 19, followed by the Ontario Fruit and Vegetable Convention (OFVC) February 20-21. The convention includes a full-day session on Berry Crops on Wednesday the 20th. Make sure to register now and join us in Niagara Falls for these events.

Berry container production

Interest has been growing over the past few years in strawberry and raspberry container production in Ontario. In the U.S., a group of researchers from universities and institutions across seven states are working together to learn more about high tunnel strawberry, raspberry and blackberry production. This project is working on different aspects of high tunnel production, including site selection, plastic choice, pest management, and production economics.

So far this project, led by researchers from Michigan State University, has found the tunnels have the potential to increase yield and quality, certain pests and diseases are less prevalent, and the season can be extended in the spring and fall.

One of the sites with strawberry high tunnels, at Pennsylvania State University led by Kathy Demchak, began using containers for the strawberry portion of their project to reduce the variability in the soil. They then integrated different substrates and different fertilizer regimes into their research project to identify the best media and fertilizer programs for the project. They included four different substrates in plastic growbags: coir, metromix, peat:perlite (2:1), and peat:perlite:coir (2:1:1), and two different fertilizer programs. They found the peat:perlite mix to provide the best results (Demchak, 2017). Between a constant fertilizer feed and mixing fertilizer with the substrate, a constant feed consistently led to larger plants in all of the different media (Demchak, 2017). Media that had the fertilizer mixed in had variable results.

After this initial experiment on different fertilizers and media, they began using deeper four-litre growbags to provide more flexibility around watering; having a well-drained mix and deeper media worked well for these strawberries. Permanent, high-tunnel structures can benefit strawberry and raspberry producers, helping to produce high-quality, consistent berries for a longer season. To learn more about all the different aspects on tunnel production, check out this project's website: www.tunnelberries.org

Reference: Growing Raspberries and Strawberries in Containers. Kathy Demchak, Pennsylvania State University, September 11, 2017. https://extension.psu.edu/growing-raspberries-and-strawberries-in-containers

FOCUS: GRAPES, VINEYARDS AND BERRIES

Nova Scotia's wineries are importing Ontario grape juice to cover major crop losses

KAREN DAVIDSON

Little did tourists realize that last summer's scenic views of the Minas Basin in Wolfville, Nova Scotia, were masking a bitter reality. Wineries in the Annapolis Valley could sell the panorama, but many were left with few grapes to harvest for next year's wine.

A June 4, 2018 frost devastated many vineyards depending on their location. One example was Luckett Vineyards where 52 acres of vineyards suffered a loss of 82 per cent.

"We've dodged a bullet for many years, but 2018 was an exception," says Marcel Kolb, vineyard manager for Luckett Vineyards. "We're now looking into various forms of frost protection such as wind machines. The decision depends on our topography."

The Nova Scotia wine industry that's worked so hard to tell its unique story of terroir and native grapes such as L'Acadie, is now compensating the loss by importing grape juice from Ontario.

In a *Halifax Chronicle-Herald* article, Jerry White, executive director of the Winery Association of Nova Scotia (WANS) says the decision to import juice from Ontario was made collaboratively, with input from the wineries, Agriculture and Agri-Food Canada and Perennia, a provincial development agency focused solely on the food sector.

It's not the first time that a northern wine region has run out of luck. Fortunately, the grape and wine industry is connected across Canada, and Ontario wineries have been able to dip into inventories to send juice eastwards.

There are 12 WANS members who comprise most of Nova Scotia's wine production. They were adamant that the move to import juice be transparent. Any blended product will be labelled "Product of Canada." However, Nova Scotia's wine appellation, Tidal Bay, will be protected with approved grape varietals sourced solely from the province. The rule is that these wines must contain a minimum of 85 per cent Nova Scotia grapes.

For many Nova Scotia wineries, the decision to bring in grape juice is based on economic survival. By blending varietals, they will still meet the demands of local and export markets.

As any grower knows, the input costs don't disappear. The vineyards still need to be pruned and maintained in anticipation of the next crop. The worrying question is what will 2019 bring. Back-to-back weather disasters would be devastating to a relatively young industry.

After the frost event, Perennia viticulture specialist Francisco Diez worked with vineyard managers on steps to diminish the impacts of the frost on future crops. An important consideration for the vines was to prevent over-cropping and other stresses. In early spring 2019, Diez will work with vineyard managers to assess the health of the vines and determine the necessary steps for a productive 2019.

The scenic view from the patio of Luckett Vineyards in July 2018 disguised the reality of a major crop loss due to unseasonal frost. Marcel Kolb, vineyard manager, is investigating ways to protect the vines.

"We've dodged a bullet for many years, but 2018 was an exception. We're now looking into various forms of frost protection such as wind machines. The decision depends on our topography.

~ MARCEL KOLB

ANNUAL FLOWER QUIZ 2019

Test your botanical knowledge

KAREN DAVIDSON

Fruits are known for their showy flowers, but vegetables have their secret charms too. Throughout the year, we go on "photo safari" to see crops during spring, summer and fall. As photographer Glenn Lowson and other contributors demonstrate, there is no end to the colours, shapes or diversity. One of these photos is neither fruit nor vegetable. Hint: it's used for health and medicinal purposes. For the answers to our 2019 quiz, go to page 25.

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NOTICE OF MEETING

is hereby given that the160th Annual

Members and Directors' Meeting of the

ONTARIO FRUIT AND VEGETABLE GROWERS' ASSOCIATION

will be held at the

SHERATON ON THE FALLS HOTEL

5875 Falls Ave, Niagara Falls, ON L2G 3K7

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Election of Directors of the Association will take place as well as dealing with resolutions and any other business that may arise.

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Test your botanical knowledge answers

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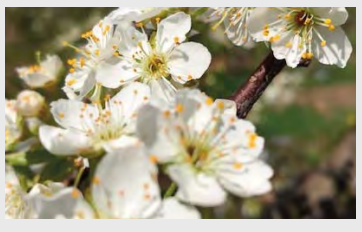
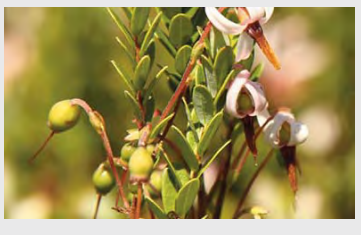
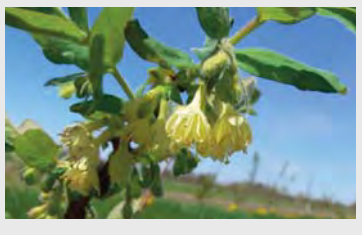
3. leek
4. Saskatoon berry
5. Purple Fresno greenhouse hot pepper (photo by Glenn Lowson)
6. Tomberry greenhouse tomato flower (photo by Glenn Lowson)
7. haskaps (photo by Evan Elford)
8. yellow plum (photo by Phil Tregunno)







CROP PROTECTION

New frontiers in plant virus management

CHRIS DUYVELSHOFF
CROP PROTECTION ADVISOR, OFVGA

Plant diseases caused by viruses have been responsible for tremendous loss since agriculture first began. It was only in the late 1890s that the concept of viruses was proposed and not until the 1950s that the structure and mechanism of transmission became known.

Viruses are microscopic particles simply comprised of a core of genetic material, encoding its infectious machinery, surrounded by a protective protein coat. Virus infection of perennial fruit crops is particularly concerning due to the length of establishment required for these crops and the fact that there are no curative treatments in the field. Grapes and strawberries have been two crops particularly affected by virus issues in recent years with the leafroll complex and redblotch virus in grapes and the strawberry mild yellow edge and mottle viruses causing significant concern for growers, respectively.

So far, virus management in plant agriculture has focused either on vector control, where insects play a key role, or developing plant material that has undergone screening during propagation to test for and exclude virus contamination. Both of these strategies have been extremely valuable in reducing the impact of viruses in field production. They do, of course, have their limitations. In the case of vectored transmission, insects such as aphids, whiteflies, or leafhoppers facilitate the spread of viruses through their movement and feeding. This requires diligent monitoring of insect populations and highly effective and rapid control sprays -- or exclusion methods such as netting where feasible -- to eliminate the insect vector prior to virus transmission.

Challenges with insect monitoring, insecticide resistance, or spray coverage, for example, can all hinder this approach to virus management. For clonally propagated crops such as strawberries and grapes, certification programs to produce "virus-tested" planting stock have been very effective at reducing virus introduction to the field. But they are always reliant on a certain sample size and only screen for a limited set of known viruses at the time of propagation. There's no guarantee that a small number of positive plants did not escape detection or that the stock couldn't be infected with a yet unknown virus that has yet to be identified.

To avoid virus issues altogether, there have been extensive -- and successful -- breeding efforts in many crops to develop virus-resistant plant materials, both through conventional and non-conventional approaches. However, breeding and introducing a new cultivar, regardless of its origin, for many crops is time consuming and not often feasible due to several factors, such as market acceptance and speed of replacement for perennial crops. Unlike all other types of plant pests, direct prevention of virus infection in an established field of susceptible plants has never yet been a management possibility. But new frontiers in science are changing this reality.

In 2006, two American researchers Andrew Fire and Craig Mello were awarded the Nobel Prize for their discovery of ribonucleic acid (RNA) interference. While their work focused on nematodes, the discovery of this mechanism has gone on to produce widespread biological implications for both plants and animals. Similar to DNA, RNA is a nucleic acid and plays an essential biological function in all known forms of life. RNA is the primary genetic material carried by most plant viruses. In the decade after its discovery, many more functions of RNA interference (RNAi) became clearer. As it turns out, one of the natural roles of RNAi is in antiviral defense. In brief, small molecules of RNA – such as from a virus – floating around a plant cell can be picked up and incorporated into a natural cellular complex as part of the RNAi process. After this complex is formed, its job is then to find other sequences in the cell matching that RNA (i.e. another copy of the virus) and destroy it by chopping it into pieces with enzymes – disabling the virus and preventing it from replicating and causing disease. It is a key part of the natural plant immune system.

This has had major implications for crop protection. By introducing sequences of RNA matching that of known plant viruses into plants, the immune system of the host can be effectively "primed" to look for and destroy the corresponding virus in the plant cell. This can be done both through transgenic approaches as well as through external applications to the plant such as through foliar sprays. Both methods have already been successfully demonstrated and some commercialized.

While foliar application of RNA has been proven to prevent virus infection, its practical use has been limited by the fact that RNAs are very sensitive molecules to environmental degradation and virtually all life forms have specific mechanisms in place to break them down, giving a foliar spray an effective life of three to seven days at best.

However, in 2017, an Australian group published research where RNA complementary to the cucumber mosaic virus (CMV) was loaded into clay particles and applied to the leaves of tobacco plants before they were inoculated with CMV. Using the clay carrier as a protector, the RNA treatment provided excellent control of CMV on tobacco plants when applied even 20 days prior to virus inoculation. This effect was also highly systemic, as protection was extended to the newest leaves despite foliar application occurring 20 days earlier.

Yes, systemic and long-lasting control of plant viruses through foliar sprays! This exciting new frontier for plant virus management has never been possible previously. Through the use of RNAi technology, we now can reliably "inoculate" susceptible plants against very specific virus targets using systemic foliar sprays that can offer possible control windows extending three weeks or longer. This is not just a theoretical concept but a reasonably close reality in plant protection.

Happy New Year!

Strawberry mild yellow edge and mottle virus.

Annual Potato Production Days advertise a packed agenda

It's not unusual for 500 growers and industry personnel to pack the Keystone Centre in Brandon for the annual Manitoba Potato Production Days. This year's event will be held January 29-31.

Keynote speakers are Dr. Peter VanderZaag, speaking about "China's potato as a staple food strategy: history, progress and challenges" and David Phillips, senior climatologist with Environment and Climate Change Canada speaking about "Tomorrow's forecast: Warmer, Wetter and Wilder."

Besides the valuable networking, growers will be treated to in-depth technical sessions. Some of the topics include:

• Colorado Potato Beetle Management in a Post Neonic World—How to Adapt to a Shrinking Tool Box

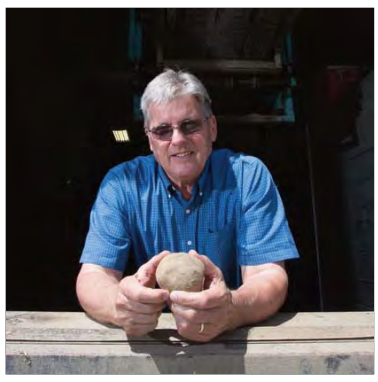
• Fungicide Positioning—Post Restriction. What to Consider when Making a Plan

• Rethinking Fungicide Strategy for Manitoba Potatoes

• Soil Compaction: What You Can't See May Hurt You

• Technical Innovations in Equipment

The popular trade show has been expanded. For registration details, go to: www.mbpotatodays.ca



Dr. Peter Vander Zaag, Sunrise Potato Company

MINOR USE

Presidio fungicide for hops

Downy mildew on hops.

JIM CHAPUT

The Pest Management Regulatory Agency (PMRA) recently announced the approval of URMULE registrations for Presidio fungicide for control of downy mildew on field and greenhouse basil and downy mildew of hops, and suppression of *Phytophthora* blight and pod rot and downy mildew on edible-podded beans in Canada. Presidio fungicide was already labeled for use on a number of crops in Canada for control of several diseases.

These minor use projects were sponsored by Agriculture and Agri-Food Canada, Pest Management Centre (AAFC-PMC) in collaboration with the US IR-4 program as a result of minor use priorities established by growers and extension personnel.

The following is provided as an abbreviated, general outline only. Users should be making pest management decisions within a robust integrated disease management program and should consult the complete label before using Presidio fungicide.

Presidio fungicide is toxic to aquatic organisms and non-target terrestrial plants. Do not apply this product or allow drift to other crops or non-target areas. Do not contaminate off-target areas or aquatic habitats when spraying or when cleaning and rinsing spray equipment or containers. The use of this product in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination. Fluopicolide is persistent and may carry over. It is recommended that any products containing fluopicolide not be used in areas treated with this product during the previous season.

Crop(s)	Target	Rate (mL/ha)	Applications	PHI (days)
Basil, field and greenhouse grown	Downy mildew	292	Apply on a 7 day schedule beginning when conditions begin to favour disease development. Presidio must be tank mixed with a labeled rate of another fungicide registered for the target pathogen, but with a different mode of action. Maximum of 3 applications per season.	1
Hops	Downy mildew	292	Apply on a 10-14 day schedule beginning when conditions begin to favour disease development. Presidio must be tank mixed with a labeled rate of another fungicide registered for the target pathogen, but with a different mode of action. Maximum of 3 applications per season.	24
Edible podded beans (Phaseolus spp, Vigna spp, jackbean, soybean, immature seed, sword bean)	Downy mildew and Phytophthora blight and pod rot (suppression)	292	Apply on a 7-14 day schedule beginning when conditions begin to favour disease development. Presidio must be tank mixed with a labeled rate of another fungicide registered for the target pathogen, but with a different mode of action. Maximum of 3 applications per season.	0

Follow all precautions and detailed directions for use on the Presidio fungicide label carefully.

For a copy of the new minor use label contact your local crop specialist, regional supply outlet or visit the PMRA label site http://www.hc-sc.gc.ca/cps-spc/pest/registrant-titulaire/tools-outils/label-etiq-eng.php

Jim Chaput is minor use coordinator, OMAFRA

EVENTS

What's new at the Ontario Fruit & Vegetable Convention

Visit The Grower and OFVGA at booth #710

Photo right: Toban Dyck

Now entering its 18th year, the Ontario Fruit and Vegetable Convention is a key gathering of the horticultural sector including government, industry, business, consultants, producers, associations, researchers and educators. Circle your calendar for February 20 and 21 at the Scotiabank Convention Centre in Niagara Falls, Ontario. Note, there is free parking. For more details, visit www.ofvc.ca

"Outstanding in HER field" breakfast panel

A new event is in the planning stages for the Ontario Fruit and Vegetable Convention, says Cathy Bartolic, executive director, Ontario Farm Fresh Marketing Association.

"Outstanding in HER field" will be staged February 21 from 8 am to 9:15 am. A networking breakfast and panel presentation will offer perspectives in agriculture from three generations of women. The panel will be moderated by Karen Davidson, editor of **The Grower**, who will close with a 15-minute Q & A session.

While pre-registration is required, there is no cost to attend the event. Room 223 will seat 100 guests.

Poster display deadline is February 1

This popular display features the research of the best minds in horticulture. For the student competition, the first 20 applications will be accepted by chair Dennis Van Dyk (dennis.vandyk@ontario.ca) Prizes are $500, $300 and $200. The regular poster display is chaired by Hannah Fraser (Hannah.fraser@ontario.ca). Deadline is February 1.

Young Farmers' Forum

Farmers, 40 and under, are invited to attend a luncheon session with Toban Dyck. He's a farmer, communicator and award-winning journalist, writing for the *Financial Post*, *Grainews* and *Maclean's*. As the director of communications for Manitoba Pulse & Soybean Growers, he practises what he preaches. He is working towards taking over his family farm and is a tireless advocate for exposing consumers to the realities of farming and food production. You can follow Toban on Twitter @tobandyck. Or better yet, read his inaugural column in the August 13, 2018 issue of *Maclean's*: https://bit.ly/2BeOn4l

Educational sessions

More than 120 educational sessions are planned with speakers from Ontario, Canada, the United States and Europe. Go to the website to customize your personal agenda for two packed days.

And for all those on social media, be sure to follow #ofvc2019.