

TIME CRUNCHED

Farm moms always work from home



As the pandemic and its variants are slowly pushed back with a vaccination program, Canadian farmers have fiercely defended and cared for their work crews of temporary foreign workers. One such example is Amanda Dooney, farm manager, Suncrest Orchards, near Simcoe, Ontario. Here, she's pictured with her "Jamaican family" who are thinning Gala apples. Photos by Glenn Lawson.

KAREN DAVIDSON

At 5:30 am, the day stretches out like a cat. No such lounging luxury exists for the farm manager of Suncrest Orchards, Simcoe, Ontario. Amanda Dooney's bare feet have hit the floor.

"I'm the farm mom," explains Dooney, with two teenagers and 18 temporary foreign workers (TFWs) who are her "Jamaican family" when the work force is full strength. Her husband Hayden is general manager of the Norfolk Fruit Growers' Association. Together, they purchased the home orchard near Simcoe in 2019, and acquired a second orchard near Waterford in 2020 for a total of 80 high-density apple acres. The past two years have taught the importance of stable accommodations and accommodating change.

Dooney was not born into a farm family, so the

adaptation curve has been steeper than most. Not only was she learning about the new farm and the growing habits of its seven apple varieties, she was coping with the administrative burden of local, provincial and federal rules. When the whoosh of the pandemic arrived like a flock of unwanted starlings, every expenditure of energy was examined for relevance to the farm family.

"Essentially, I am responsible for human resources," says Dooney, "and that includes everything from payroll to employee training, isolation and groceries. I had to tune my ear to the Jamaican accent to learn what was needed."

Culturally appropriate foods for Jamaicans – such as tinned milk and bottled peppers – are a yes-yes. But most interestingly, she observed the healthy eating habits of TFWs that Canadians could learn to fuel their bodies for outdoor work. Some of their staples are chicken feet soup, brimming with collagen and minerals that are good for strong bones. Soup is on the stove on a year-round basis.

Okra is a popular vegetable choice – "good for joints" they say.

Many Jamaican dishes are served on the bone. Head-to-tail eating is an old tradition in Jamaican culture, particularly when it comes to goat curry and jerk chicken. To cater to these food preferences, Dooney has installed a large chest freezer.

When Jamaican workers finally arrived in spring 2020, Dooney was tasked with training. COVID-19 was a clear and present danger, but she also warned about the detrimental effects of heat stress in the orchard. As temperatures spiked, she was buying Gatorade by the case and soon realized what an expensive outlay it was. Her tip? Buy powered electrolytes on the internet and add a scoop, as needed, to metal water bottles.

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Effects of BC's heat wave PG 4

Vaccination progress PG 6

Equipment and new technology PG 12

AT PRESS TIME...

Grower impacted by hot, dry weather

As the North American Drought Monitor shows, many parts of western Canada haven't received any significant rainfall through the spring and summer months. Extreme heat and dry weather have already reduced the potential yield of many grain and oilseed crops. Potatoes, for the most part, are under irrigation but the status of available water supplies is dependent on region.

Farm Credit Canada will work with customers to come up with solutions for their operations

and will consider additional short term credit options, deferral of principal payments and/or other loan payment schedule amendments to reduce financial pressures on those impacted by unfavourable weather.

"Producers across Western Canada are doing their best during difficult circumstances. Our government is working very closely with FCC, provincial partners and stakeholders to respond as quickly as possible to the drought in western Canada," says Marie-Claude Bibeau, Minister of Agriculture and Agri-Food.

Customers in western Canada

are encouraged to contact their FCC relationship manager sooner rather than later to allow for the most flexibility in discussing options available to them.

In the western United States, the situation is dire. As OFVGA chair Bill George writes in this month's column, "California fruit and vegetable growers are once again dealing with historic drought and ensuing water shortages are causing some to shift what they produce or even stop production altogether."

For more on his perspective, go to page 8.

North American Drought Monitor

June 30, 2021

Released: Tuesday, July 13, 2021

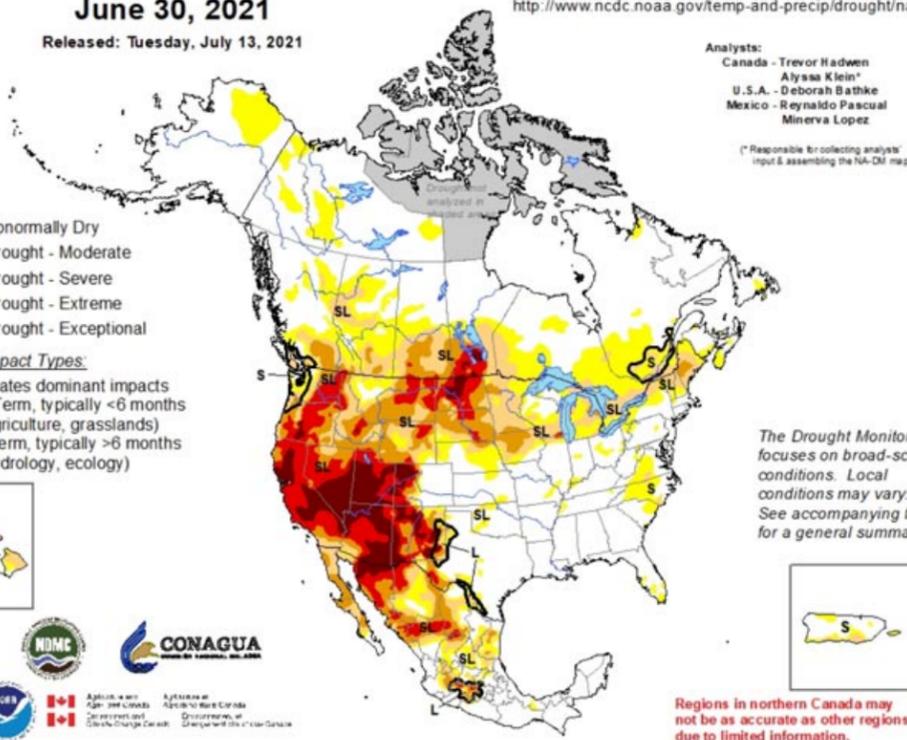
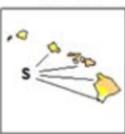
<http://www.ncdc.noaa.gov/temp-and-precip/drought/nadm>

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(* Responsible for collecting analysts' input & assembling the NA-DM map)

Intensity
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional

Drought Impact Types:
~ Delineates dominant impacts
S = Short-Term, typically <6 months (e.g. agriculture, grasslands)
L = Long-Term, typically >6 months (e.g. hydrology, ecology)



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text for a general summary.

Regions in northern Canada may not be as accurate as other regions due to limited information.

NEWSMAKERS

Ralph Eichler is reprising his role as agriculture minister in a July 15 mini-cabinet shuffle in Manitoba. He held the position from 2016 to 2019. His foremost concern will be seeking drought relief for many areas of the province.

Nova Scotia's premier has called an election for August 17. Agriculture minister **Keith Colwell**, 73, is retiring from politics. He has served in the role since 2013.

With **Lisa Thompson** now in the position of Ontario agriculture, food and rural affairs minister, that makes three new politicians coming for a face-to-face, federal-provincial-territorial ag ministers' meeting in September in Guelph, Ontario.

Wayne Easter, 71, will not run for a 10th term as a federal Liberal candidate in the Prince Edward Island riding of Malpeque. He's been a familiar face in agricultural circles. He was parliamentary secretary to the minister of Agriculture and Agri-Food Canada from 2004-2006, and he was agriculture critic from 2006-2014. Most recently, he has been chair of the House of Commons finance committee.

The board of directors of Peak of the Market has announced **Pamela Kolochuk** as the new chief executive officer. She joined the company in 2017 as chief financial officer and succeeds **Larry McIntosh**. Peak of the Market is a household name in Manitoba for supplying more than 100 different varieties of fresh, quality produce.



Pamela Kolochuk

Five outstanding leaders have been named to the Canadian Agricultural Hall of Fame for 2021. The inductees are: **Gordon Bacon**, visionary leader for Canada's pulse sector; **Dr. Don Buckingham**, agricultural law leader in Canada; **Stan Eby**, trusted beef farmer and agricultural leader; **Johanne Ross**, passionate advocate for agricultural education; and **Dr. Phil Williams**, pioneering cereal chemist. The induction ceremony is scheduled for November 21, 2021 at the Fairmont Winnipeg.

The 2020 inductees will also be formally recognized at this event: **Jay Bradshaw**, **James Halford**, **Dr. Bryan Harvey** and **Dr. Douglas Hedley**.

Congratulations to **Scotian Gold**, celebrating 64 years of business in Nova Scotia's Annapolis Valley.

On August 1, 2021, **Danielle Synotte** becomes executive director of the British Columbia Agriculture Council which represents 28 farm organizations in the province. She's an internal hire, succeeding **Reg Ens** who becomes the new general manager of the Western Agriculture Labour Initiative. Most recently, the council conducted a survey of BC consumers that showed 96 per cent of respondents believe that farmers provide good-quality products, 80 per cent believe farmers care for the animals they raise and are environmentally conscious, 90 per cent agree that farmers are trustworthy/reliable, and 73 per cent believe farmers treat their workers fairly.



Danielle Synotte

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COVER STORY

Farm moms always work from home

“Essentially, I am responsible for human resources, and that includes everything from payroll to employee training, isolation and groceries. I had to tune my ear to the Jamaican accent to learn what was needed.”

~ AMANDA DOONEY

Continued from page 1

For each and every worker, there's a home story. Dooney makes it her business to diarize the names of her workers' wives and families. Every month, there's an occasion to honour the birthdays of farm workers. Father's Day is yet another party date on the farm calendar.

Every worker receives a week's worth of branded Suncrest Orchards shirts, pants and baseball caps. Toques are available for the chilly months. This gesture is practical but, as Dooney notes, the workers are all part of the family team working towards a common goal.

Situated in the catchment of the Haldimand-Norfolk Health Unit, Suncrest Orchards is one of many farm employers adhering to the strictest standards in the country in terms of housing and isolating workers. In mid-July 2021, the unit reported about 3,800 TFWs in the counties. It's not the largest concentration of TFWs in Canada, but has been the subject of media headlines and documentaries.

With negative coverage hopefully in the rear mirror, proactive building projects are underway. Dooney, for example, has promised her TFWs new living quarters by September 2021 apple harvest. Benefits include more spacious communal quarters with dishwasher and more privacy in bedrooms. More storage will be available for orchard gear. Air conditioning and temperature controls will be in each bedroom. New mattresses have already arrived.

It may take months or years before new housing recommendations become reality, so Dooney is plunging ahead on the premise that comfort comes first. With new apple acres coming into full production, she will need happy workers to pick the load.

Amanda Dooney's story is one that's familiar to the president of the Canadian Federation of Agriculture. Rooted in Summerside, Prince Edward Island, Mary Robinson brings seasoned perspective to the issues encountered in the last year.

"It's been tough," says Robinson. "For farm men and women both, depending on your

point of privilege – some by gender, race and birthright – your experience of the pandemic depends on where you are on the spectrum of your journey in life."

For Robinson, she recounts how she was born into a family that's been Island farming for 200 years. Her support mechanisms are a husband that looks after domestic chores plus a professional executive staff in Ottawa. Her kids are adults. She astutely points out another perspective. Think of a mother who's working at Tim Horton's with kids at home – for her, the last year's experience is entirely different.

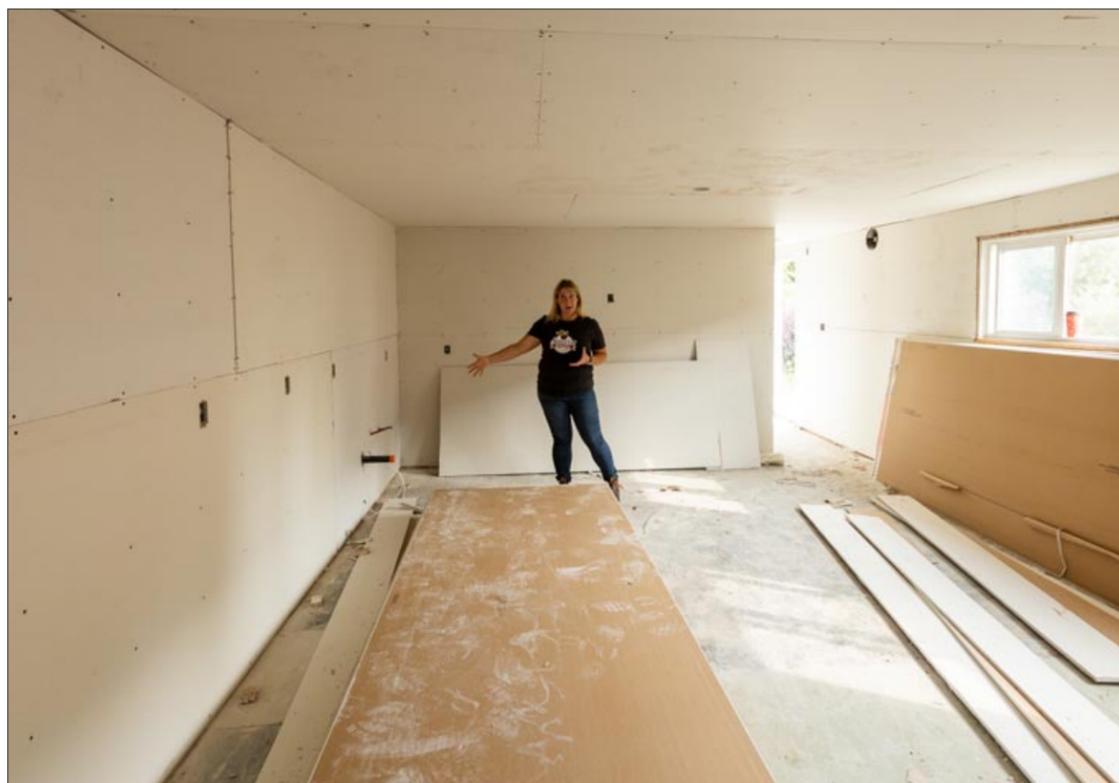
As a farm political leader, Robinson has learned to cut herself some slack.

"I'm making peace that my house is not perfect," says Robinson. "My grandmother who was a major influence in my life would have said never to leave a dirty dish in the sink. But I'm learning that it's not necessary to put these demands on ourselves. Check your expectations. And be joyful in the moment."

Mary Robinson and Amanda Dooney have never met. But some of this wisdom is already in evidence at Suncrest Orchards.

At the end of a long day, Dooney saddles up her horse and rides to the back of the farm where there is a newly reclaimed pond, native grasses and flowers. There's a peace here, punctuated by a bullfrog, that's just rejuvenating enough to kickstart another long day tomorrow.

The Grower goes "Behind the Scenes" with Amanda Dooney, Suncrest Orchards, Simcoe, Ontario. As a rookie farm manager, she shares the challenges of a pandemic year and how to bring comfort to temporary foreign workers. This series is sponsored by BASF Agricultural Solutions.



Amanda Dooney shows the amenities that will be provided in new bunkhouses at Suncrest Orchards. The hallmarks are: more communal kitchen space, more privacy, more convenience for storage and laundry. The move-in date is set for fall 2021 apple harvest.



These Jamaican workers are encouraged to stay hydrated on hot days and to take frequent breaks. L-R: Raymond O'Connor, Marlon Johnson and in the background, George Mitchell.



Amanda Dooney kids Livian Thompson about his 56th birthday celebrated on the farm in July. Under the Seasonal Agricultural Worker Program, he's been coming back to Canada for 20 years. "He cares for our farm like his own and we appreciate his intimate knowledge of the land and orchards," says Dooney.

CROSS COUNTRY DIGEST

BRITISH COLUMBIA

Heat damage to BC cherries less than feared

At the end of June and early July 2021, blast-furnace temperatures of 45°C and higher had British Columbia's cherry growers on edge, but estimates for the tender fruit crop were more optimistic as of mid-July.

Sukhpaul Bal, president of the BC Cherry Association told the *Kelowna Daily Courier* that total damage is about 10 per cent of the crop, citing good leaf canopies which protected the maturing fruit. He didn't want to downplay damage on specific farms, but says that overall, these are isolated incidents depending on geography.

For the record, on June 29, seven locations in British Columbia met or exceeded the 45°C mark including Lytton (49.5°C), Cache Creek (47.4°C), Grand Forks (45°C), Kamloops (47.3°C), Kelowna (45.2°C), Lillooet (46.7°C) and Osoyoos (45°C).

"Several of our waterfront farms appreciated the cooling lake effect during the recent heat wave," reports Julie McLachlan, general sales manager for Jealous Fruits, based in Kelowna. In her July 10 newsletter, she anticipated that from July 14 onward, the company would have a full, continuous supply of cherries through to late August.

"The record-high temperatures of late June and

early July were unwelcome, but we were fortunate in that much of our crop was too green to suffer sunburn. We expect that our sugar and firmness levels will be perfectly in line with previous years, given the return to more seasonal temperatures. However, we do anticipate that our size will be slightly smaller than normal, as sizing temporarily stalled in the peak of the hot weather. Stem quality this year is excellent, which also helped our crops weather the late June heat."

Jealous Fruits has 450 acres situated at 1900 to 2600 feet in elevation, and these sites experienced peak temperatures three degrees centigrade cooler than valley bottom sites.

"We also have 200 acres of orchards located very close to either Okanagan Lake or Wood Lake, and these sites were much cooler than valley bottom sites away from the lake," McLachlan explained. "Of our bearing acreage this year, more than 70 per cent was moderated either by altitude, or proximity to large bodies of water. Finally, though these were record-breaking temperatures throughout the northwest, our northerly latitude did take the edge off, at all of our farms."

Source: *Jealous Fruits July 10, 2021 newsletter*



Eduardo Vaca Castro, part of a crew of about 125, is pictured night picking in a Lapin cherry orchard in the Glenmore neighbourhood in Kelowna, BC about 1 am July 20. Photo courtesy of Myrna Stark Leader.

MANITOBA

Canadian Produce Person of the year honoured

Larry McIntosh, recently retired as president and CEO of Peak of the Market for 27 years, is this year's winner of the Canadian Produce Person of the Year. A virtual event was held July 21, 2021 when Tom Karst, editor of *The Packer* and Ron Lemaire, president of the Canadian Produce Marketing Association presented the award.

Always an outgoing and marketing-savvy personality, Larry McIntosh made the Peak of the Market brand a household name in the province of Manitoba and beyond. His signature line: "Don't forget to

eat your veggies!"

In the past, he has worked with local food banks and many non-profit organizations. He currently volunteers his time as a director with the Canadian Red Cross, Rossbrook House Foundation as well as serving as a member of the Canadian Food Policy Advisory Council.

Larry has served on many Boards to volunteer his time and passion to the produce industry:

- Canadian Food Policy Advisory Council Member 2021 to Present
- CPMA Marketing Committee 1997 to present
- CPMA North American Trade

Working Group 2011 to present

- Produce Marketing Association, Global Development Committee Member representing Canada 2006 to 2009 and 2019 to 2021
- Canadian Produce Marketing Association Sponsorship Chair for CPMA 2018 Vancouver Convention & Trade Show 2017 to 2018

- Produce Marketing Association Membership Committee 2014 to 2017 (Chair 2015/2016)
- Canadian Produce Marketing Association Director 1997 to 2013 (Chair 2007/2008)
- Produce Marketing Association Director 2010 to 2013



CANADA

Canadian potato acreage up at almost 380,000 acres

Statistics Canada released its first estimate of potato acreage on July 16 from data obtained with a survey of Canadian potato growers.

"Please note that Quebec data was not available during the collection period, so a five-year average of their seeded acreage was used in its place," comments Kevin MacIsaac, general manager, United Potato Growers of Canada. "Quebec data and corresponding Canadian data will be updated on December 7, when the estimates for harvested area, yield and production are released."

The 2021 potato acreage is

estimated at 378,624 acres. This is an increase of 5.3 per cent above 2020. A year ago, the 2020 acreage had declined below 2019 plantings due to COVID-19 market uncertainty. This year's increase, predominantly in major processing provinces, helps bring supply in the industry back to meet demand increases in the industry that began pre-COVID.

The acreage of potatoes planted in Canada, is still well below its peak of 457,500 acres which occurred back in 2003. The most significant acreage increases in 2021 occurred in the western provinces of Alberta and Manitoba, where each area has

had processing plant expansion in the last two to three years.

Alberta producers planted an additional 7,823 acres (+13.1%). Manitoba growers planted an additional 7,200 acres (10.1%). The third largest increase is in New Brunswick where an additional 4,600 acres (9.2%) are estimated to be planted to help supply a formed line expansion for the fry plant in that province.

Ontario's increase (5%) is also driven by strong processing demand – for chips, not fries. Prince Edward Island reports an increase (1.1%) at 84,500 acres as it continues to plant the largest acreage in the country.



These Dakota Pearl potatoes were photographed at the farm of David and Colleen VanderZaag, Melancthon, Ontario by Eugenia Banks.

The survey has used Quebec's five-year average of 43,000 acres, however industry expected acreage to be at least equal to last year's 45,638 acres with demand increases identified for both fresh and processing sectors.

It is also surprising, says MacIsaac, to see a decrease reported in British Columbia

(5%) down to 6,000 acres. Acreage in Saskatchewan moves back up closer to traditional levels at 6,200 acres. Nova Scotia reports a decline of 100 acres this year.

Source: *United Potato Growers of Canada July 16, 2021 news release*

CROSS COUNTRY DIGEST

QUEBEC

Vertical farm to serve Quebec and Atlantic Canada retailers

GoodLeaf Farms plans to break ground on an indoor vertical farm in the Montreal vicinity in fall 2021. If construction meets all deadlines, then grocery stores in Quebec and Atlantic Canada could be receiving micro greens by fall 2022. The offering would include pea shoots, micro radish, micro arugula, micro Asian blend, spicy mustard medley and baby kale.

This facility would represent the company's first expansion since establishing its commercial-scale farm in Guelph, Ontario, in 2019.

"It is GoodLeaf's intention to build a stable of indoor vertical farms that support the Canadian grocery network, food service industry and consumers—starting with an expansion into Quebec," said Barry Murchie, CEO.

"We are committed to growing in the province of Quebec and are encouraged by the support and collaboration we have been getting from stakeholders and all levels of government," he said. "We are looking forward to finalizing all of the details."

GoodLeaf produces 800,000 pounds of greens annually from

its 45,000-sq.-ft. automated vertical farm facility in Guelph, which are sold through grocery retailers such as Longo's, Loblaws and Whole Foods Market.

In February 2021, McCain Foods announced it would invest more than \$65 million in GoodLeaf Farms subsidiary TruLeaf Sustainable Agriculture, making it the single-largest shareholder in the company.



NOVA SCOTIA

Perennia's Plant Health Lab launches new website

Perennia's Plant Health Lab offers valuable services to Nova Scotia's growers. A relaunch of the website highlights information about services, specialists, pathogens of concern, and how to submit samples.

For example, meet the molecular biologist, Dr. Kendra McClure and plant pathologist Dr. Sajid Rehman.

"If you are interested in dropping off a sample from your farm for analysis, please follow the instructions on our website, and drop it off at our new Kentville office located at 28 Aberdeen Street between the hours of 8:00 am - 4:30 pm" writes Francisco Diez in his grape blog.

Alternatively, growers can contact lab specialists for more sampling information details.

Link here: www.perennia.ca/agriculture/plant-health-lab/

Source: *Grape blog*, July 8, 2021

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VACCINATION PROGRESS

Outreach overcomes hesitancy concerns

KAREN DAVIDSON

Organizing an on-farm clinic for almost 100 workers, staff and partners demanded a lot of logistics, but it was worth it for Sandy Shore Farms, Port Burwell, Ontario. The asparagus and vegetable operation is committed to keeping its employees safe and healthy.

“Switch Health and the Haldimand-Norfolk Health Unit were very easy to work with and acted as partners though this whole process,” says Rebecca Belmore, corporate controller, Sandy Shore Farms. “At the end of the clinic on July 15, we had 100 per cent of our offshore workers vaccinated. It was a remarkable day!”

Just three weeks prior, the giant asparagus packing facility was dismantled for the season and converted into an arena for spaced-out tables and chairs. Arrows on the floor and designated areas were clearly marked for traffic flow. A registration table greeted workers who presented their identity credentials for pre-arranged appointments. Once vaccinated, each person waited for 15 minutes and then was asked by medical personnel if any side effects were being experienced. A separate exit area processed certificates of vaccination.

“I don’t think we would have had the same success if we had to bus workers off-site,” says Ken Wall, Sandy Shore Farms. “There was definitely vaccine hesitancy among our workers. They aren’t used to this.”

The Haldimand-Norfolk

Health Unit (HNHU) provided assistance, on-site staff and general guidance as well as providing a resource for workers to ask questions and get information.

“One of our workers actually spoke directly to a doctor at the health unit to get answers about the vaccine,” says Belmore. “Their patience was outstanding!”

About 3,800 temporary foreign workers (TFWs) have arrived to Haldimand and Norfolk according to Nicole Stone, health promoter, HNHU. She reports that as of July 19, 2021, about 79 per cent of TFWs who have arrived to the counties have received at least one dose of the COVID-19 vaccine.

“Please note that this data has some limitations as it relies on the reporting of arrivals by farm operators and may not account for all TFWs,” says Stone. “The number of TFWs who are vaccinated may also be under-reported if they were not identified as a TFW at the time of vaccination. We recognize that this vaccination coverage is above our community average and we believe this is, in part, due to the commitment from some of the large farm operators in our area who are attempting to have their staff fully vaccinated. Some large farms report 100 per cent coverage among their TFW workforce.”

The vaccine program has been bolstered, says Stone, by a number of culturally appropriate resources, including factsheets and videos from the Ontario Fruit and Vegetable Growers’ Association, available in Spanish, English and Thai.

Status of vaccination policies

With second vaccinations in full gear, the Ontario Fruit and Vegetable Growers’ Association (OFVGA) reminds farm employers that workers taking a day or part of a day off work to get a COVID-19 vaccination are entitled to a “paid infectious disease emergency leave” corresponding to the wages they would have earned had they not taken the leave.

Taking time off to get vaccinated is one of a number of COVID-19 related circumstances under which workers are entitled to this paid leave, which was put in place by the Ontario government in late April 2021 and remains in place until September 25, 2021.

Employers are eligible to be reimbursed for wages they are obligated to pay due to this requirement. You can access compensation from the COVID-19 Worker Income Protection Benefit Program through WSIB’s website.

Departure travel requirements for TFWs returning home

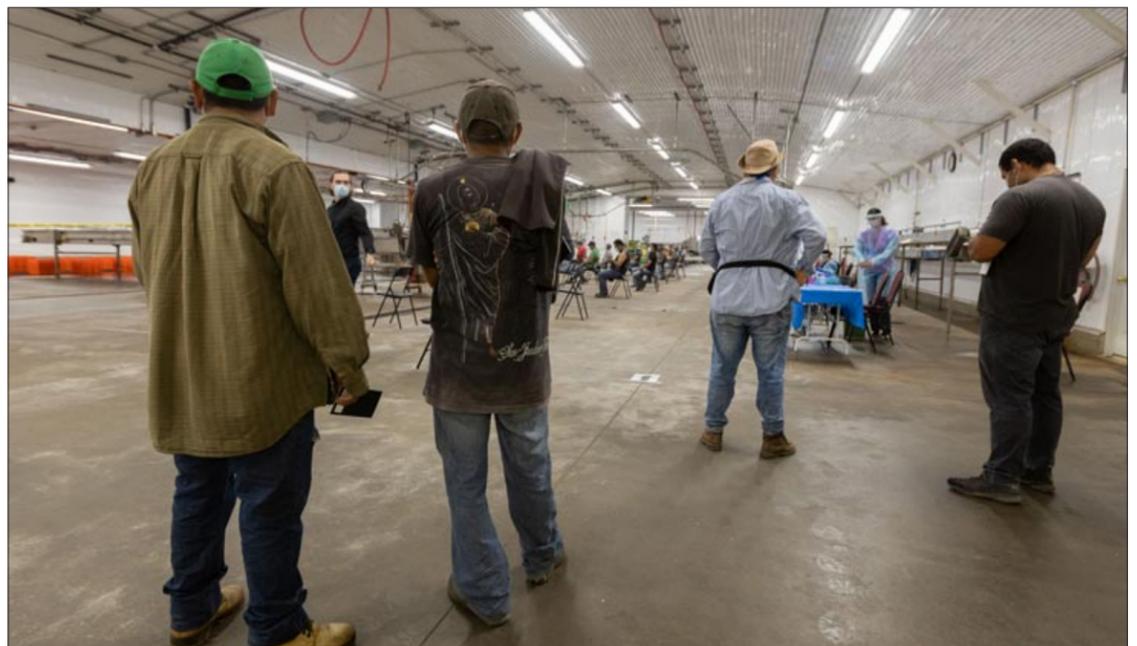
With some growing season activities complete, some workers are now returning to their home countries. Each country has its own travel and entry requirements. If an employer wishes to check individual country requirements, they can do this here: www.iata.org/en/programs/covid-19-resources-guidelines/destination-tracker/ (Click on air travel, then select the destination country).

Some countries require pre-departure COVID testing prior to boarding a flight. The eastern Caribbean, Barbados, Trinidad & Tobago and Jamaica, require TFWs to obtain a negative test within 72 hours prior to travel. Test results are required regardless of whether the individual has received two doses of the vaccine or not.

Toronto’s Pearson Airport is now offering pre-departure testing near the terminals at



Temporary foreign workers have their Mexican passports in hand for the registration desk at Sandy Shore Farms, Port Burwell, Ontario.



In early July the asparagus packing line was dismantled to make way for a spacious on-farm vaccination clinic for workers, staff and partners.



Sandy Shore Farms received 96 temporary foreign workers from January through April. On July 15, its on-farm immunization clinic resulted in a 100 per cent vaccination rate with at least one dose. Photos by Glenn Lawson.

Viscount Station. Details for the testing are here: www.torontopearson.com/en/healthy-airport/covid-19-testing-at-toronto-pearson/departing-passengers. The tests are offered

by Switch Health and can be booked at this link: www.torontopearson.com/en/healthy-airport/covid-19-testing-at-toronto-pearson/departing-passengers. It is highly

recommended that employers call Switch Health prior to booking the service.

INDUSTRY AFFAIRS

Ag ministers commit to Code of Practice

Canada's federal, provincial and territorial (FPT) ag ministers are committed to support a Canadian food industry Code of Practice. The statement was made during a virtual meeting on July 15.

According to the Canadian Produce Marketing Association (CPMA), the FPT Working Group's report focuses on a transparent, collaborative and industry-led approach. This guidance aligns perfectly with the submission presented to the ministers by the Canadian Food Industry Collaborative Alliance.

The alliance has identified and built industry principles and key elements that must be embedded in a Canadian Food Industry Code of Practice including:

- Ensuring transparency and contractual certainty in all commercial transactions
- Ensuring best practice reciprocity throughout the supply chain
- Promoting fair and ethical dealings in contract negotiations, particularly where there is a significant disparity in negotiating power between the parties
- Ensuring equitable distribution of food supply
- Supporting small and medium-sized parties to commercial transactions
- Providing a fair, effective and applicable dispute resolution process

The Canadian produce industry supports the alliance's position that, to be effective, the Code of Practice must be mandatory, enforceable and industry self-regulated. With the ministers' support, the produce industry recommends putting in place a collaborative process to establish the Code of Practice and its enforcement framework during the next 18 months.

The fresh produce industry has a longstanding history of collaborative business practices specifically on the buy-sell transaction. The Dispute Resolution Corporation, founded in 2000, demonstrates this success.

The produce marketing associations across Canada are looking forward to working with the Alliance, other industry stakeholders and the FPT ministers on this initiative to strengthen Canada's food system in a collaborative, reciprocal and practical manner.

The British Columbia Fruit Growers' Association (BCFGA), representing 800 tree fruit growers, also supports more steps on food retailer practices. In a July 16 news release, BCFGA underscored that the Findings of the Federal-Provincial-Territorial Working Group on Retail Fees challenged the fairness of the current system of highly consolidated food retailers in their

dealings with many small and medium-sized suppliers.

BCFGA made two key points:

- Retail fees are payments made by suppliers to many retailers in exchange for the stocking of products on shelves and associated costs. While some fees are generally accepted, an increasing number of others are seen as contentious (such as retroactive or unilateral fees).
- The lack of predictability and transparency creates uncertainty which some processors indicated has affected their interest in

investing, and which primary producers have argued increases costs on suppliers from fees and associated administrative costs and for which there is a lack of avenues for recourse.

"This is an important step forward for resolving a problem the BCFGA identified over four years ago," said Pinder Dhaliwal, BCFGA president. "But it will take a lot of good will and commitment to get to a resolution by the end of the year."



Source: Canadian Produce Marketing Association, British

Columbia Fruit Growers' Association July 16, 2021



Feeding Your Future: meeting your hiring and training needs

FREE JOB MATCHING SERVICE

OFA has partnered with AgCareers to find skilled workers that will suit Ontario farmers' needs. The service will help farmers to:

- Set up an employer account online
- Post job openings, and
- Manage applications

WORKER SAFETY & AWARENESS TRAINING

OFA has partnered with the University of Guelph Ridgetown Campus to develop the **Ontario Agriculture Worker Safety & Awareness Certificate**.

This online training certificate offers several e-learning modules, including:

- A broad overview of health and safety on farm
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This project was funded by the Canadian Agricultural Partnership, a five-year federal-provincial-territorial initiative.

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Supporting
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farm
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CHAIR'S PERSPECTIVE

Focusing on farming - but with an eye to the future



BILL GEORGE JR.
CHAIR, OFVGA

government, public health units and growers to make sure every worker who wants to be vaccinated is able to do so. So far, too, this year, we've been spared the outbreaks that plagued our sector in the earlier days of this pandemic.

It's not to say that getting this season underway hasn't been stressful. Many of us have endured a lot of stress, complication, and expense as a result of the pandemic and getting workers here, and there are still a lot of unknowns about what comes next. How long will vaccinations last? Will there be another wave or are we finally coming out the other side of this pandemic? What will next year bring?

For the time being, though, it feels almost like we've gone back to a somewhat normal life after the high speed everyone has been running on for the last year. It's something we've all been looking forward to as an industry and as an organization after the huge

effort everyone has been through the last 16 months so we could continue to run our farms and grow food for Canadians.

Now, like every other year before COVID-19, we're mostly back to worrying about Mother Nature and what curve balls she might have up her sleeve to throw our way.

As we emerge from the pandemic, it's time to evaluate the needs of the sector and if and how those have changed in the last two years. Issues such as labour, crop protection and safety net programming continue to be key priorities for the Ontario Fruit and Vegetable Growers' Association (OFVGA), but it's also important to stay on top of societal trends and attitudinal shifts.

Climate change and environmental concerns were already growing in importance before the pandemic, but as we look to the sweltering heat waves in British Columbia and the western United States, we know

these are rapidly becoming top-level priorities.

California fruit and vegetable growers are once again dealing with historic drought, and ensuing water shortages are causing some to shift what they produce or even stop production altogether. That state is a leading produce supplier to much of North America and as other markets we depend on also experience climate-based disasters, it highlights more than ever the absolute necessity of being able to produce as much of our own food as possible.

What will that look like in the future as we also deal with climate-based impacts on our production? How will that affect our needs for crop protection, labour or even safety net programming? Last year marked the first time that labour shortages were included as a peril for crop insurance, for example.

The pandemic has shown Canada and the world what happens if you're unprepared for a

crisis, reduce long-term infrastructure investments and lack surge capacity to respond to emergencies of longer duration.

Food production is not something that can be ramped up overnight. It takes time and money to plant trees or vines, build packing and storage infrastructure, and develop processing capacity. We need to look at how we can identify issues and problems so we can be better prepared for the next crisis, whatever it may be, that will come our way.

That means as an organization and as an industry, we can't take our foot off the gas. We have to stay engaged and at the table to make sure our voice is heard where policy is being developed and decisions are being made.

And we'll make sure we do that -- but for these few weeks, I'm appreciating just being able to focus on farming again.

WEATHER VANE



Zooming and hovering, dragonflies seem to be acrobats in flight. However this particular dragonfly found cause to pause in the patch at Blueberry Hill Estates, St. Williams, Ontario. Photo by Glenn Lowson.

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URBAN COWBOY

For broadband, maps are good. Service is better.



OWEN ROBERTS

This could be – and perhaps should be -- another story about how the COVID-19 pandemic shone a glaring spotlight on the poor state of rural broadband, globally.

But instead, it's a story about North America-wide progress. Sort of.

In the U.S., the Biden administration has released a broadband mapping tool called "The Indicators of Broadband Need." On this map, broadband deficit areas identified by public and private sources are marked in red . . . including most of rural America outside city centres.

U.S. Secretary of Commerce Gina Raimondo was pleased a

tool was developed that clearly identified areas of need. But she was dismayed with what it revealed. "This paints a sobering view of the challenges facing far too many Americans as they try to connect to high-speed broadband and participate in our modern economy," she said.

Added Federal Communications Commission Acting Chair Jessica Rosenworcel: "Broadband is no longer nice to have. It's need to have. To ensure that every household has the internet access necessary for success in the digital age, we need better ways to accurately measure where high-speed service has reached Americans and where it has not."

Percolating frustration with the snail's pace of delivery is evident everywhere as maps, posturing and excuses run their course. It's sparked a no-nonsense initiative in the U.S. called the American Connection Project, launched a year ago by Land O'Lakes which is now backed by more than 50 major companies and organizations. They're advocating for a whopping \$80 billion to be earmarked and spent across the country for border-to-border broadband.

The project also calls for free

wireless in some rural areas, and training young people to help rural communities establish broadband. That, says project organizers, will help farmers and others take advantage of the economic opportunities that broadband brings – among them, more reliable online sales and e-commerce, not to mention better Internet for precision farming purposes.

The most recent development from this effort is a program called the American Connection Corps. It vows to fund up to 50 lobbyists (it calls them fellowships) for two years to crowd boardroom tables and develop relationships for better connectivity.

And it's not just agri-food interests that have stepped up. Illinois Extension, Microsoft and the Mayo Clinic for example are also American Connection Corps sponsors and supporters, each recognizing how important broadband is to health and education, not to mention food production.

Canada could use such an initiative. On July 15, Canada's Ministers of Agriculture met by video conference to discuss what they called several "key areas of interest" for the country's ag

sector. In the communique following their meeting, they said the topics discussed included the next Agricultural Policy Framework, preventing and preparing for the threat of African Swine Fever, and potential long-term improvements to the suite of Business Risk Management programs.

They also mentioned "setting the stage for a strong and sustainable future." Surely, that includes investing in better broadband access. But they didn't say.

At the provincial level, Ontario has an ambitious investment in broadband. In March 2021, it announced nearly \$4 billion to connect every region across the province to high-speed internet by 2025. A Ministry of Infrastructure spokesperson told me this was a "bold commitment," adding that it's the largest single investment in high-speed Internet, in any province, by any government in Canadian history.

Investment is important, it says, because about 700,000 households and businesses still lack access to adequate broadband speeds...or have no access at all. Two publicly accessible map tools are available showing broadband service availability in Ontario.

The first is managed by Industry, Science, and Economic Development Canada (ISED). It's based on data provided by internet service providers across Canada on where and what type of services they provide. You can download the base data used to for this map to create modified map images and shapes.

The second is a tool developed by the Ministry of Infrastructure to support the "Improving Connectivity for Ontario" program delivery. It uses the same data as the ISED map tool and presents it in a slightly different way. Data can't be downloaded; instead, the tool can be used to draw shapes, and the data layers more accurately show the road level data points used to determine service availability at the street level.

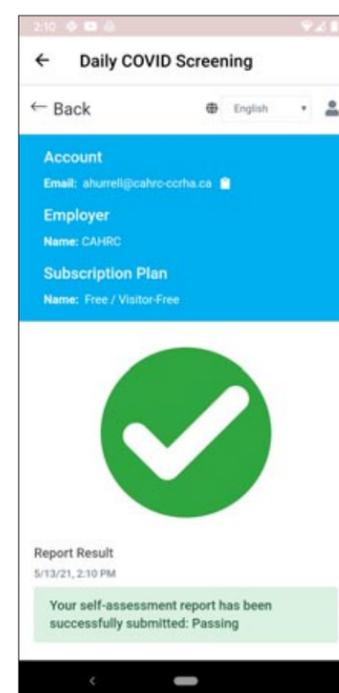
Maps are good. Service is better. A lot of money is on the table and the need is huge. It's way past time for adequate rural broadband.

Owen Roberts is a faculty member at the University of Illinois at Urbana-Champaign.

NEW - DAILY COVID SCREENING APP FOR EMPLOYERS IN ONTARIO

COVID-19 screening of workers - in accordance with local health unit direction - is a requirement for Ontario employers under the Reopening Ontario Act. This app is being provided to make it easier for growers to fulfill this requirement.

- ✓ Eliminate paperwork
- ✓ Automate the collection and reminders
- ✓ Instant notification of failed screens
- ✓ Each farm is independently managed
- ✓ English, Spanish and Thai assessments
- ✓ Includes employees and visitors
- ✓ NO CHARGE for Ontario producers to use for 2021
- ✓ Available for free through the HUB Connect App



Thanks to the government funding, this program is offered at NO CHARGE to Ontario growers for the full 2021 year. Go to <https://www.ofvga.org/screening-app> or scan the QR code to download the HUB Connect App and get access to the free daily screening feature for the rest of 2021.

BELOW THE BORDER

Normalized demand, not regulation, will solve supply chain delays



The Port of Los Angeles handled more than 9.2 million TEU in 2020. Photo courtesy of Port of Los Angeles.

The COVID-19 cargo congestion brought on by extreme demand in combination with operational disruptions is very real and felt across supply chains globally. In the U.S. in particular, all parts of the supply chain are facing unprecedented pressures. There is a lack of rail and truck capacity, warehouses are full, and ports are bursting at the seams. It is in part in this context that the President Biden is issuing an Executive Order that addresses shipping along with other

industries.

The driver of these problems is demand for imports by U.S. consumers and U.S. businesses. Of the past 12 months, 11 months have had a year-on-year growth in spending on consumer goods of more than 10 per cent. To put this into perspective, in the 18 years before the pandemic, the average growth rate was just under 5.0 per cent. The impact of this sustained increase in spending on consumer goods is manifested in the volume of U.S.

container imports stressing the supply chain. In its most recent assessment of market conditions, Drewry Shipping Consultants concludes: "The surge in Asian exports being shipped to North America continues unabated. In the first three months of 2021, eastbound volumes grew by 34 per cent - the highest quarterly gain by far since Drewry's current records began in 1995."

Ocean carriers are employing all available capacity and pulling out all stops to manage the

operational disruptions brought on by COVID-19. But when marine terminals cannot clear the cargo already on the docks, ships cannot berth to discharge and load cargo. And marine terminals cannot clear cargo if the importers of that cargo have no warehouse or distribution space to put those containers. And containers are stuck in many places in the U.S. waiting for adequate rail and truck capacity to move them.

"This is not the fault of any given supply chain actor. Supply chains simply cannot efficiently handle this extreme demand surge, thus resulting in the delays, disruptions and capacity shortages felt across the chain. All supply

chain players are working to clear the system, but the fact is that as long as the massive import demand from U.S. businesses and consumers continues, the challenges will remain," says John Butler, president & CEO of World Shipping Council.

The industry remains competitive by any measure, and the current situation is not caused by any lack of competition. There are more than 50 ocean carriers operating more than 1,000 ships that provide some 180 liner services to U.S. importers and exporters.

Source: World Shipping Council, July 9, 2021 news release

China poised to become number one ag trader with U.S.

“Obviously, we’re much better off without a trade war than we were with a trade war with China in terms of agriculture. But that’s a complicated relationship, and anything can disrupt it at any point in time.

~ TOM VILSACK, U.S. SECRETARY OF AGRICULTURE

The good news is that China is buying billions of dollars of U.S. farm products again. Forecasts are for \$35 billion of business, primarily in corn, soybeans and meat in 2021. However, China now represents \$1 out of every \$5 of U.S. farm exports. Given the precariousness of global politics, U.S. secretary of agriculture Tom Vilsack warns of over-reliance on the Chinese market.

Vilsack ventured his opinion at the 2021 Forbes/THRIVE Future of Food Summit held virtually in late June. As reported by *Successful Farming*, he said, "We need to be less reliant on one or two countries and more reliant on a number of countries." Together, China, Canada, Mexico and Japan represent more than half of U.S. farm exports.

"Obviously, we're much better off without a trade war than we



were with a trade war with China in terms of agriculture," Vilsack continued. "But that's a complicated relationship, and anything can disrupt it at any point in time. Which is why I

think it is going to be important, at the appropriate time, for the administration to take a look at where there are new partnerships, new arrangements, new connections."

COMING EVENTS 2021

- Aug 9 Nova Scotia Fruit Growers' Association Summer Orchard Tour VIRTUAL
 - Aug 19-20 U.S. Apple Association Annual Conference, Ritz Carlton, Chicago, IL
 - Aug 28 Farm and Food Care Ontario Breakfast from the farm, Lindsay fairgrounds
 - Sept 4 Verona Lions Garlic Farmers' Market, Verona, ON 9 am - 2 pm
 - Sept 7-9 Macfrut and International Asparagus Days, Rimini Expo Centre, Italy
 - Sept 20-22 United Fresh Annual Washington Conference, Grand Hyatt, Washington, DC
 - Sept 23-27 Canadian Farm Writers' Federation Annual General Meeting, Windsor, ON VIRTUAL
 - Sept 28-30 Asia Fruit Logistica CANCELLED
 - Oct 6-7 Canadian Greenhouse Conference, VIRTUAL
 - Oct 13-14 Public Trust Summit, Canadian Centre for Food Integrity, Toronto, ON
 - Oct 28-30 Produce Marketing Association Fresh Summit, New Orleans, LA LIVE
 - Nov 5-14 Royal Agricultural Winter Fair, Exhibition Place, Toronto, ON VIRTUAL
 - Nov 4 -6 Interpoma, Bolzano, Italy
 - Nov 21 Induction Ceremony, Canadian Agricultural Hall of Fame, Fairmont Winnipeg, Winnipeg, MB
 - Nov 22-24 Alberta Potato Conference and Trade Show, Cambridge Hotel and Conference Centre, Red Deer, AB
 - Nov 30-Dec 2 Grow Canada Conference, Calgary, AB
- 2022**
- Feb 9-11 Fruit Logistica, Berlin
 - Feb 22 Canada's Agriculture Day
 - Feb 22 Ontario Fruit and Vegetable Growers' Association Annual General Meeting, Hilton Hotel, Niagara Falls, ON
 - Feb 23-24 Ontario Fruit and Vegetable Convention, Scotiabank Centre, Niagara Falls, ON

RETAIL NAVIGATOR

Any shelf is not the right shelf



PETER CHAPMAN

Producers are very focused on getting a quality product into the box or the bag. This is complicated and there are so many challenges to getting this done right. Inputs, labour, weather and the list goes on. Unfortunately, the work is not done when the quality product is packed. To maximize the opportunity, you need to understand your customers and find the right shelf for your products to be sold.

There is work required to find the right shelf. The right shelf will result in the best relationship between your business and your customers. When you try to put your products on any shelf, there is a much greater chance you and or your customer will not be happy and you will not generate the best return.

The right shelf is the place where they will: Understand your product, Treat your product properly, Attract the consumers who are most likely to buy your product.

Finding the right shelf

You should know your product better than anyone, better than any retailer. You should have a good definition of the person who will purchase it in the store. For example, if you are producing organic products you can create a good definition of this shopper. If you supply a premium product, you know that consumer is different than most people shopping in the discount stores.

Once you define who will be buying your product, review the options for retailers. There are many formats in the market and they are all designed to appeal to different segments of the market. Yes, there is overlap for sure, but each format definitely has a target market. Identify the stores that align best with your products.

You should consider your products but also the business model you have. If your business is designed to produce a lot of volume and focus on efficiencies in your packing plant, then you probably need to put your sales efforts into the large mass merchants or big box stores. They are more aligned with your business.

If your business is designed to

produce unique crops and you need a premium price, then you should consider more specialty stores. These stores like to have unique products and need smaller quantities of more items. This is very different than the big stores which are looking for bigger quantities of fewer items.

Geography, distribution and quantity are also considerations when finding the right shelf. Some retailers only have formats in specific geographies. There are many examples where formats such as Provigo, Maxi and IGA are specific to the Quebec market. You also require the ability to service the distribution network of the retailer. This can be delivered to the warehouse or, in some cases, direct to stores. It is also beneficial to find customers with the demand for the volume you have. They usually do not require you to supply all stores, but they do need a group of suppliers that can add up to the amount they need.

There are unique opportunities within the formats too

Often, we think of the retail channel being warehouse club, mass merchants, traditional grocery, discount and specialty. The following chart includes some of the stores within each segment across Canada (see chart).

There are many more stores and most would be in the specialty or traditional grocery columns. There are some stores that might not fit exactly into one column. Urban Fare and Fresh St Market stores in British Columbia are examples. They have a specialty store focus on fresh but could be considered traditional grocery too. If you produce products that are popular with South Asian consumers, then the Chalo FreshCo stores, owned by Sobeys, might be the right shelf. This is an example of a segment, within a segment.

Prioritize the right shelf with your sales efforts

Once you have determined the right shelf within different market segments, prioritize your sales efforts. Focus on these stores. You might not always be successful with your first choice as they could have the category filled. If this happens, move to your second choice but continue to stay in contact with your first choice. You never know when something might change and the retailer will need a new solution.

Your business will be better when you have your products on the right shelf. You will be better aligned with the retailer and be able to spend more time on the things you like in your business. When suppliers and retailers are not well aligned, you will be



Warehouse Club	Mass Merchants	Traditional Grocery	Discount	Specialty
Costco	Walmart	Sobeys	No Frills	Farm Boy
	Real Canadian Superstore	Metro	FreshCo	Pete's Fine Foods
	Super C	Loblaw	Chalo FreshCo	Pusateri's
		Safeway	Maxi	Sunterra Markets
		Provigo	Food Basics	T&T
		Longo's		Nations
		Save On Foods		Fresh St Market
		IGA		Urban Fare
		Co op		
		Zehrs		
		Fortinos		
		Independent		



forced to spend even more time on sales.

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 SKUFood. Peter works with producers and processors to help them get their products on the shelf and into the shopping cart.

FOCUS: EQUIPMENT AND NEW TECHNOLOGY

Self-propelled garlic harvester saves labour



KAREN DAVIDSON

The pandemic has pushed decisions into the here and now for garlic grower Bob Romaniuk. He's built a self-propelled harvester that can scoop bulbs from four rows at a time over 65 acres of hardneck garlic near Harley, Ontario.

Why now? He wants to save the costs of 30 people hand-harvesting garlic. He also calculates that an off-the-shelf garlic harvester still requires a \$80,000 to \$100,000 tractor beside it to haul the garlic wagons to storage.

While most of society was in lockdown last winter, he was in a nearby fabrication shop that's known to cater to

specialty crops such as ginseng and garlic. Kukielka Fabricating, Vanessa, Ontario, built a prototype using a New Idea drive unit with 265 horsepower. It has the hydraulics that can adjust the lifting edge so that the bulbs are harvested without damaging the cloves.

"Go too deep and you'll dig up too much soil," says Romaniuk. His garlic is planted at depths of 3 1/2 to four inches of sandy loam soil. The objective is to lift the garlic with as little soil adhering to the bulb as possible.

As the bulbs proceed along rubber belting, the tops are cut off at about 3/4 inch above the neck. The garlic travels into a side cart before it's unloaded for curing.

Most garlic harvesters are set up for spacing of 14-, 18- or 20-inch rows. However Romaniuk plants high-density

garlic of 80,000 cloves per acre with only 12-inch spacing between the rows. At harvest time, depending on the year, he expects 4,500 pounds of garlic per acre. He sells the garlic at retail prices at sizes of small, medium, large, jumbo and super jumbo. The remainder is sold wholesale to local on-farm markets.

Romaniuk's "garbine" – an amalgam of garlic and combine – may be unconventional for 2021, but it promises to speed up harvest during unpredictable weather. It's a piece of new equipment that could be used over more acres if Romaniuk decides to contract growers to fill the big opportunity for more Ontario-grown garlic.

Photo by Glenn Lowson.

SCENE ON TWITTER . . . IN THE FIELD

KAREN DAVIDSON

In the potato world, the Soiltech Wireless moisture sensor is promising a whole life cycle of data. The pre-configured, pre-charged device is "planted," then "harvested" and "stored" along with the crop.

The Idaho-based company was launched in 2017 and is now servicing clients around the world. Download the app and customize alert thresholds. For more information, go to: www.soiltechwireless.com



SoiltechWireless @SoiltechW · May 14

Pivots deliver amazing insights and control to farmers. But what about what they can't control? I'm in a 20mph crosswind watching water fall 60ft away from where it should be. Reliable, real-time sensors can assist pivots in these situations to give farmers the complete picture.



Installed a couple of these @SoiltechW sensors in a trial field this afternoon. Buried sensor with no antenna uploading to the cloud by LTE... pretty cool. #agronomy



Kristen Obeid @WeedProfesh · Jun 16

Testing out the Oz robotic weeder today in celery. Pretty cool!



0:14 | 20.9K views



Pinned Tweet

Kristen Obeid @WeedProfesh · Jul 7

Today testing Haggerty Creeks Naio Oz robots in peppers. The more I see the cooler it is!



0:25 | 5.7K views

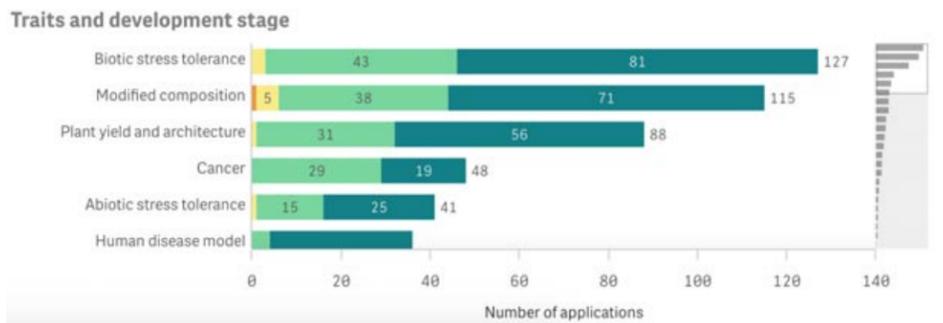
In Ontario, OMAFRA has partnered with Haggerty Creek www.haggertycreek.com to test Autonomous Oz weeding robot www.naio-technologies.com/en/oz in eight different vegetable crops. Watch for a project report in late fall.

FOCUS: EQUIPMENT AND NEW TECHNOLOGY

The cutting edge is a pair of genetic scissors



Tokyo-based Sanatech Seed Company launched the world's first genome-edited tomato in March 2021. The Silician Rouge High-GABA tomato contains high levels of amino acids that help lower blood pressure.



“
There needs to be clear and pragmatic processes, the right level of regulatory oversight. It's really important to get this right.
 ~ JENNIFER HUBERT, CROPLIFE CANADA

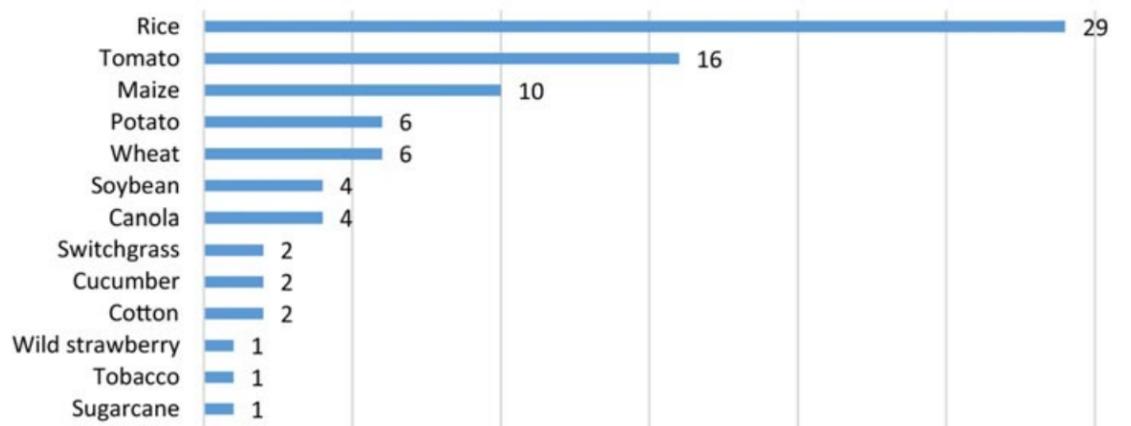


Figure 1: A literature review was conducted of total amount of genome-editing applications in crops with market-oriented traits. From the period of January 1996 – May 2018, there were 16 applications in tomato and six in potatoes. Source: Environment Evidence Journal, July 12, 2019.

KAREN DAVIDSON

Is a pitless cherry the next seedless watermelon? That's a question for a food start-up in Research Triangle Park, North Carolina.

Pairwise is a gene-editing, technology company that, according to its website, "is here to change the story of fruits and vegetables by making them the most irresistible food on the planet." That means using CRISPR to delete or insert genes with reliability.

CRISPR, the gene editing tool, stands for clustered regularly interspaced short palindromic repeats. Like many breakthroughs – let's think of mRNA vaccines, for example – the science has been underway for years. Gene editing was first explored in 1996, but it wasn't until October 7, 2020 when mass media spotlighted the development of a method for genome editing with the news of the Nobel prize in Chemistry.

The science is an international effort between two researchers: Jennifer Doudna, a University of California biochemist and Emmanuelle Charpentier, a French microbiologist now at the Max Planck Unit for the Science of Pathogens, in Berlin Germany.

In a 2015 TED Talk, Jennifer Doudna pointed out how the genetic scissors could solve

human genetic diseases, but plant researchers see low-hanging fruit -- to borrow a phrase -- in a faster scientific and regulatory route to commercial products. In 2017, Pairwise was founded by some surprising corporate veterans turned entrepreneurs. The CEO of Pairwise is Dr. Tom Adams who served as vice-president of global biotechnology at Monsanto before it was bought by life sciences company Bayer. The chief business officer of Pairwise is Dr. Haven Baker, the former senior vice-president/ general manager of Simplot Plant Sciences where he led the team that launched the non-browning Innate potato.

Tangential but germane to horticulture, these habitual pioneers have been in the trenches for decades. They have shepherded the genetically modified organism (GMO) technology that farmers have readily adopted in corn, soybeans and canola. Understanding the hesitancy of consumers about GMOs, they have carefully calibrated the Pairwise tag line: Growing with Care, Growing to Crave.

Gene-editing promises a much faster route to a commercially viable product because there is no need to introduce the genes of another species. Pairwise's first entry into the retail world will be a new variety of leafy greens proclaimed Adams in early 2021.

In the world of plant breeding, breakthroughs are happening every day. On June 21, 2021, United Kingdom researchers published results showing that the healthy glucosinolate compounds in brassica crops can be increased using gene editing technology. These are the compounds that give a pungent flavour to brassica vegetables such as broccoli, cabbage and kale. Not only do they bestow memorable flavour profiles but they contain cancer-fighting properties.

"Modern technologies such as gene editing by CRISPR provide opportunities to nutritionally fortify foods and safely adapt crops to new environments, addressing the serious challenge that the climate crisis is posing to global food production," Professor Lars Østergaard, a group leader at the John Innes Centre and one of the authors of the U.K. study told ScienceDaily.

These trials in the U.K. are remarkable in two ways: positive agronomic results in the field and the first trials since the reclassification of gene-edited crops as genetically modified organisms by the Court of Justice of the European Union in 2018. The U.K. government is currently considering how to regulate gene-editing in food production

after consulting the public.

The 2020 Nobel prize is quickly fading in the rear-view mirror. Researchers at the University of Copenhagen announced an algorithm in June 2021 to make CRISPR gene editing even more precise. Jennifer Hubert, director, plant bio-technology, CropLife Canada, has been following developments closely. She notes that the first gene-edited crop to be commercially launched was a modified-oil soybean developed by Calyxt. In 2019, the Minnesota-based company sold high-oleic soybean cooking oil to select restaurants based on a feature of 20 per cent less saturated fat. Interestingly, it's labelled non-GMO. Hubert predicts more products will be launched in the U.S., Japan and South America in the near term.

"There needs to be clear and pragmatic processes, the right level of regulatory oversight," says Hubert. "It's really important to get this right."

Argentina, she points out, was actually the first country to adopt clarifications to its oversight, excluding most products of gene editing from its GMO regulations and many other South American countries have followed suit.

Twenty-five years ago, the public response to genetically modified organisms (GMOs) was fearful, with residual effects today.

"GMO crops are big business," says Hubert. "What's different with gene editing is that there's an opportunity for small- and medium-sized business to participate in producing a diversity of fruit and vegetable crops."

What will those first crops be? In a literature review of the top 10 crops with commercial applicability, tomatoes placed second. And potatoes placed fourth. A Japanese company, Sanatech Seed, launched the world's first genome-edited Otomato in March 2021. The Silician Rouge High GABA tomato contains high levels of an amino acid that helps lower blood pressure.

Back in Canada, plant breeding innovations are regulated by Health Canada (food) and the Canadian Food Inspection Agency (environment and feed). Hubert says, "Right now, the CFIA consultation is ongoing: Guidance for determining whether a plant is subject to Part V of the Seeds Regulations. Comments are due by September 16, 2021."

FOCUS: EQUIPMENT AND NEW TECHNOLOGY

How to make sense and dollars from data

“

What can be more impactful than helping people grow food?

~ COLE POWERS

”

KAREN DAVIDSON

According to Tracxn, there are 420 agritech start-ups in Canada. In its July 2021 listing, some of the top 10 include companies such as: Sollum -- provider of lighting solutions; Terramera -- developer of plant-based biopesticides; and Goodleaf Farms -- hydroponic cultivator of vegetables in vertical farms.

These Canadian names may be foreign to horticulture, not yet established as brands, yet they represent millions of dollars of investment. Who's ever heard of Tracxn, for that matter? It's a research firm based in Palo Alto, California providing startup data to venture capitalists.

The point is that business is global and local at the same time. Entrepreneur Cole Powers is a case in point. He's the co-founder of IntelliCulture, a Waterloo, Ontario-based company with a simple mission statement: to provide farm management software that prevents costly mistakes on the farm. He's currently

spending two weeks in California on-boarding nut growers as well as table grape and wine grape clients. When he graduated in 2019 from the University of Waterloo's mechanical engineering program, he quickly realized that his passion was not in automotive technologies but in agriculture.

"I grew up in Ontario, surrounded by farms," says Powers. "What can be more impactful than helping people grow food?"

Agriculture is the lucky recipient of his talents. His LinkedIn resumé details the four months of work he performed for Tesla in its Powertrain Systems Integration Firmware Engineering.

"At Tesla, I developed and implemented requirement and test casing framework and dashboards for torque safety systems," he shares.

Fast forward. At IntelliCulture, Powers and the team are now leveraging GPS technology, quite common on farms, by relaying information



Cole Powers, co-founder of IntelliCulture, is currently on-boarding vineyard clients in California.

"from the wheels" to the Cloud and making data more digestible for farmers. These information relays are possible from any piece of machinery, from grape harvesters to ATVs.

A practical case is to look at spray events on the farm. Is the equipment being used to optimum use or is there overspray at the end of the row while turning? When large tracts of land are involved, the losses can amount to big money. Powers talks about "historical coverage mapping" and analyzing whether spray coverage of crop protection products has been adequate.

IntelliCulture also breaks down analysis "block by block" to see what differences there may be between spray operators. Best practices can be determined and then shared accordingly in training of operators.

"Acre/hour metrics or cohorting is all about balancing the all-star operators with the novice operators," says Powers.

Schuyler Farms is an Ontario client using the IntelliCulture technology. One of the features is scheduling of equipment maintenance. In the midst of harvest season, it's easy to forget that an engine works better with

an oil change after 300 hours. An action report will flag an upcoming appointment and an overdue appointment.

"Whether the appointment is kept or not, it's a way to help managers," says Powers. "Preventive maintenance is better than downtime."

IntelliCulture has the tools for farm managers to make more timely and informed decisions. The costing is available on a subscription basis, and is scalable according to farm size.



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Abundant Robotics exits apple research

In the apple world, all eyes have been on the progress of Abundant Robotics, a California start-up that promised to become the world's first commercial robotic apple harvester. Despite a debut in New Zealand in March 2019 and \$10 million in venture capital, those aspirations are now over. The company put its intellectual property and assets up for sale on June 29, 2021.

Dan Steere, co-founder and CEO, said "the company was unable to develop the market traction necessary to support its business during the pandemic."

It's a disappointment for the Washington Tree Fruit Research Commission which had supplied early seed money and guidance. With worker shortages becoming ever more critical, the Washington industry had bets on an automated system that combined computer vision and a



vacuum end-effector to select and pick ripe fruit before transferring it into a bin.

The company's business model was to own, maintain, transport and operate the robots in exchange for contract payments. Abundant Robotics estimated that its machine could reach between 50 and 90 per cent of fruit on trees, but that success rate depended on canopy management in high-density orchards.

Attention now turns to FFRobotics, an Israeli company. Its picker has multiple arms and "fingers" to grip, twist and pull fruit from trees. The technology was on view at the Fruit Logistica trade show in Berlin, Germany in February 2019.

Source: *therobotreport.com* and *Good Fruit Grower*

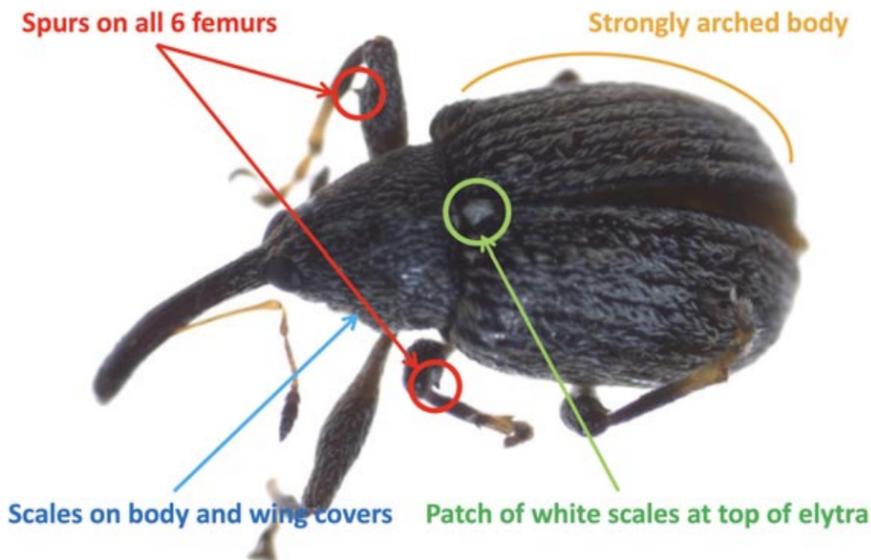
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Ontario Ministry of Agriculture, Food and Rural Affairs

Evil weevils return: pepper weevil and some commonly confused cousins

Anthonomus eugenii



AMANDA TRACEY

Pepper weevil is an economically important pest of field and greenhouse peppers in southwestern Ontario. For the fifth consecutive year, a survey was set up for the region at the end of June. After only one week of the activated program, the first pepper weevil adult was captured a few kilometers outside of Leamington, Ontario.

With limited control options available to growers, the best chance at successful management of pepper weevil hinges on early detection of the insect pest in the crop. Thus, if you grow peppers, include pheromone traps in the crop as part of your monitoring program. However, these pheromone traps can also attract other weevil species that are not pepper pests and may set off some unnecessary alarm bells.

Here are some tips to help determine if what you have caught on your trap is indeed an 'evil weevil' for pepper production. You will need a hand lens or magnifying glass to be able to see some smaller details. A 15-20x magnification, or higher, is ideal. Some of the features may be covered in glue from the trap, so be prepared to manipulate any suspects with fine tweezers, pins, etc.

Anthonomus eugenii (common name: pepper weevil): Pepper weevil is 2-3.5 mm in length and 1.5-1.8 mm in width with a strongly arched, oval body shape. It can be mahogany brown to almost black in colour and its body and hind wings are covered in small white to yellow scales

(fine hairs). It also has a small concentration of white scales at the top of the wing covers (elytra). Under close examination, small spurs can be observed on all six femurs (upper segment of the leg). It prefers peppers, but can also feed and sometimes reproduce on other solanaceous species, such as eggplant and nightshades

Anthonomus signatus (common name: strawberry bud/clipper weevil): The strawberry bud or strawberry clipper weevil is less than 3 mm in length and has an oval body shape, similar to pepper weevil. It is a dark reddish-brown colour and has a large spot on each wing cover, which can be difficult to see on some specimens. It also has a concentration of white scales at the top of the elytra and a thin covering of scales over the entire body. As per its name, it is most commonly found on strawberries where it lays eggs in flower buds and then clips the buds from the plants.

Ceutorhynchus rapae (common name: cabbage curculio): The cabbage curculio averages 2.7-3.2 mm in length and has a rounder body shape when compared to pepper weevil. It has spurs on the hind-most femurs, which can be difficult to see. It is black with a thick covering of white scales over its entire body, making it appear greyer. The scales on the top (dorsal side) of the weevil are small and narrow, while the scales underneath (ventral side) are larger and wider. It is commonly found feeding on brassica species such as cabbage, broccoli and mustard.

Tychius picirostris (common

name: clover seed weevil): The clover seed weevil is 2.5-3 mm long and approximately 1 mm wide, with an elongated-oval body shape. It is dark greenish-brown to black in colour, depending on the age of the specimen. It has a thick covering of white scales over the entire weevil and the scales on the elytra are neatly organized into double rows. It is common in areas where clover species are present.

These are just a few examples of the many weevil species that could be found on pepper weevil pheromone traps. For more information on identifying weevils found on traps, OMAFRA staff have developed a great guide titled "Which Weevil Warrants Worry?" Link: medium.com/ongreenhousevegetables/which-weevil-warrants-worry-6f6a8402b23c

If you have a suspect weevil and would like confirmation or would just like more information on pepper weevil monitoring, control, etc., please contact: Amanda Tracey (Vegetable Crops Specialist, OMAFRA) at amanda.tracey@ontario.ca or Andrew Wylie (Acting Greenhouse Vegetable IPM Specialist, OMAFRA) at andrew.c.wylie@ontario.ca.

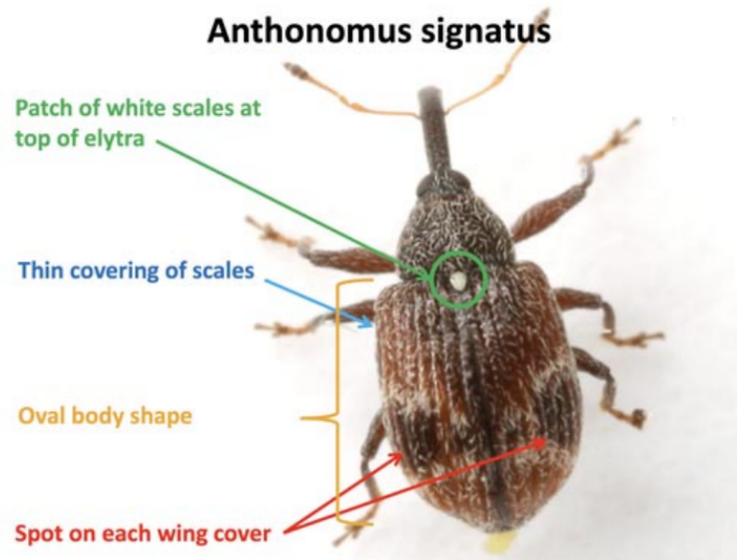
Picture credits: (1) Denise Beaton, OMAFRA, (2) Janice LeBoeuf, OMAFRA, (3) <https://bugguide.net/node/view/1349936>, (4) <https://bugguide.net/node/view/1142835>,

Amanda Tracey is a vegetable crop specialist for OMAFRA.

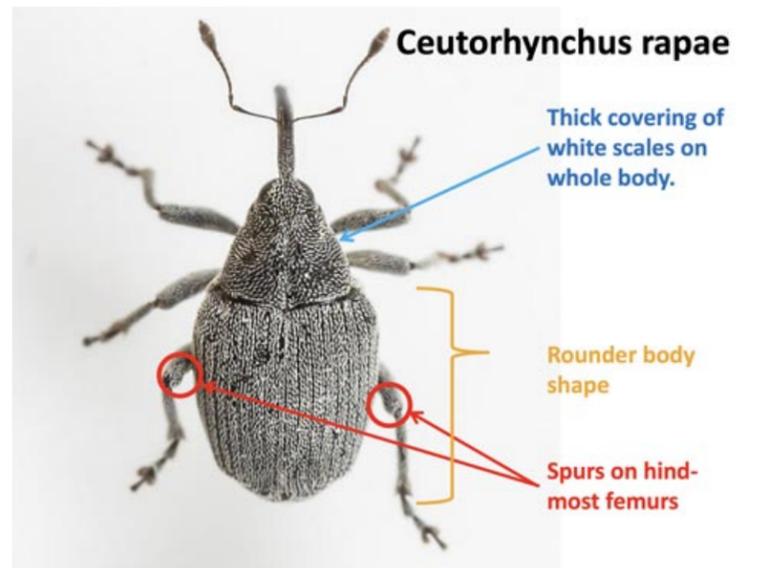


Pepper weevil on pheromone trap

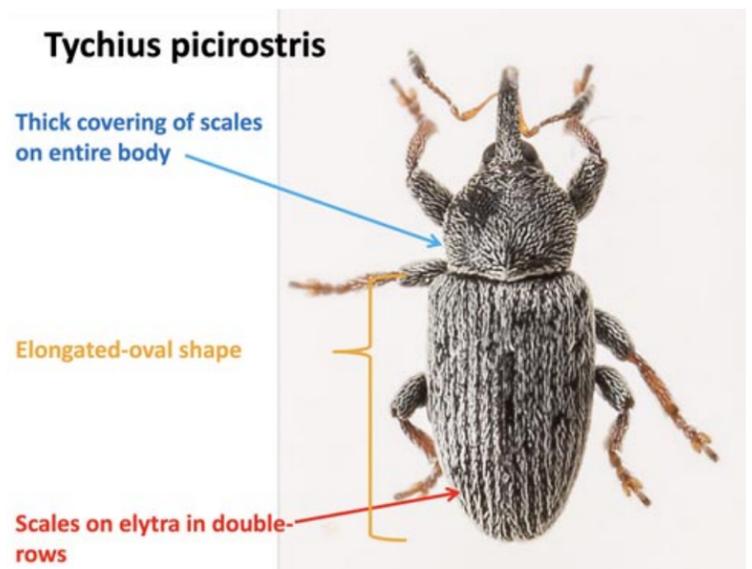
Anthonomus signatus



Ceutorhynchus rapae



Tychius picirostris



BITS AND BITES

Modernizing Canada's grades and requirements for fresh fruit and vegetables



The Dispute Resolution Corporation (DRC) initiative to review and modernize the (CFIA) Canadian Grade Compendium: Volume 2 – Fresh Fruit or Vegetable Grades and Requirements continues to progress well.

A review of 16 of the 30 standards has been completed by industry-named representatives. The mandate of the commodity-specific review teams is to bring commodity-specific knowledge to the table representative of growing, shipping, packing and marketing in order to consider and make recommendations for relevant updates and amendments. Reviewers have been very engaged and provided valuable

input. It is important to recognize that this project would not be possible without their expertise and significant contributions.

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- Carrots

- Onions
- Parsnips
- Potatoes
- Rutabagas

The completed standards, as well as a new standard for nectarines based on a test market authorization, are under review by CFIA. Once its review of the 17 standards has been completed, a World Trade Organization (WTO) notification will take place and the proposed changes will be posted to the CFIA website for a public comment period. The proposed changes will also be posted to the DRC website.

Industry review of the remaining

standards will be completed by early fall, followed by the required CFIA review and further WTO notifications.

For additional information on the reviews and next steps, contact Anne Fowlie (afowlie@fvdrc.com).

The DRC-led initiative is supported by the AgriAssurance Program, under the Canadian Agricultural Partnership, a federal, provincial territorial initiative.

Source: Dispute Resolution Corporation

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CROP PROTECTION

Current and future status of neonicotinoids in Canada



CALEIGH HALLINK-IRWIN
MANAGER,
CROP PROTECTION, CHC

After years of re-evaluations and special reviews, the Pest Management Regulatory Agency (PMRA) has finally completed its work on the neonicotinoid imidacloprid, and the end of re-evaluation is in sight for thiamethoxam and clothianidin. In May of 2021, the PMRA published its final decision on the general review of imidacloprid, and in June 2021, the agency published the proposed decision on the special review on squash bees for imidacloprid, thiamethoxam and clothianidin. If you have been keeping track, that's a total of nine re-evaluations or special reviews on these three crop protection products since 2016!

Imidacloprid

The final decision for the general re-evaluation of Imidacloprid (Admire, Merit, Gaucho, etc.) was published in May 2021. As this is a final decision, there is no comment period, and the decision cannot be disputed without new scientific evidence. Imidacloprid had already been evaluated for risks to pollinators (see RVD2019-06), so this general re-evaluation looked just at risks to human health and the environment other than pollinators.

In good news, many of the uses of imidacloprid were deemed acceptable. However, there were some uses cancelled due to environmental risks. These are in addition to the restrictions already put in place to protect pollinators and aquatic invertebrates, and include cancellation of (from RVD2021-05):

- Seed treatment for corn flea beetle on field and sweet corn.
- Direct field seeding of seed treated brassica vegetables (such as broccoli and cabbage) and seed treated leafy vegetables (such as lettuce). Continued registration for transplants only.
- In-furrow application on brassica, leafy, and root and tuber vegetables (including potato) and listed pests. The use on these crops is cancelled due to the maximum application rate being reduced to 100 g a.i./ha or because the maximum allowable rate will be exceeded based on the row spacing for these crops.
- In-furrow application on tobacco and listed pests.
- Soil drench application on brassica, leafy, and root and tuber vegetables (including potato, excluding sugar beet) and listed pests. The use on these crops is cancelled due to the maximum application rate being reduced to 86.6 g a.i./ha or because the maximum allowable rate will be exceeded based on the row spacing for these crops.
- Field application of tray plug drench application on leafy vegetables and listed pests. The use on these crops is cancelled due to the maximum application rate being reduced to 86.6 g a.i./ha.
- Foliar and granular application on turf and listed pests.
- Foliar application on lowbush blueberry and listed pests.

A number of risk mitigation measures are also being put into place to protect human health and the environment. In order to protect human health, the new labels will be updated to current standards and include increased engineering controls, personal protective equipment, and re-entry intervals. In order to protect environmental health, there will be reductions in the maximum application rate for seed treatments (field corn, sweet corn, soybean, vegetables) and a limit to one foliar application per season on vegetables, potatoes, legumes, and tobacco. Greenhouse uses will be permitted only if there are measures in place to prevent effluent or runoff into ponds, lakes, or other waters, and greenhouse recirculation systems must be third-party certified.



The PMRA has published its proposed decision for the special review of thiamethoxam, clothianidin, and imidacloprid on squash bees in cucurbits.

Please consult the new label or the re-evaluation document for further details.

The PMRA has given users 24 months to transition to the new label with amended uses and mitigation measures, so the last day of permitted use of the old label is May 19, 2023. The only exception is the application of soil drench on ginseng for control of European chafer, which was found to lack any alternative, and so this use has been granted a 24-month extension to 2025. For entirely cancelled products, there is the standard three-year phase out, beginning with registrants and ending with users in 2024.

Squash bees

The PMRA has published its proposed decision for the special review of thiamethoxam, clothianidin, and imidacloprid on squash bees in cucurbits. As this is a proposed decision and not a final decision, there is an open comment period and the PMRA will take all comments into account before it publishes a final decision on this special review.

The proposed decision was published June 29, 2021, and in good news for growers, the

PMRA has approved continued use of neonicotinoids on cucurbits, based on the new and updated use patterns (ex. one foliar application of clothianidin). The PMRA took all of the other re-evaluations and special reviews into account when making this decision, and saw that no further changes were necessary, as use on cucurbits has been reviewed multiple times in the past few years.

Conclusions

From the Canadian Horticultural Council's (CHC) perspective, we have certainly lost important uses of imidacloprid on fruits and vegetables, such as in-furrow application on potatoes, and soil applications for field vegetables. In addition, compliance to the new imidacloprid label in 2023 is going to be extremely complicated, as May 19 is right in the middle of planting.

In positive news, however, we have not yet lost all uses of imidacloprid, thiamethoxam or clothianidin. The PMRA spent a lot of time and effort to review enormous amounts of neonicotinoid data and

consultation comments over the last few years, ensuring that there were no unacceptable risks to human health or the environment, and we are very thankful that they are taking a thorough, scientific approach to assessing these critically important crop protection tools.

Looking ahead, we can anticipate the publication of the last three neonicotinoid final decisions: squash bees (date to be determined), clothianidin (2023), and thiamethoxam (2023). Once these final decisions are published, the uncertainty surrounding neonicotinoids that we've experienced in the last few years will finally be behind us. Beyond the neonicotinoids, growers continue to need tools in their crop protection toolboxes. The CHC is working on behalf of growers to ensure that the PMRA has sufficient resources to continue to make science- and data-based decisions, and increase funding to the Pest Management Centre in order to build and bolster the growers' toolboxes moving forward.

Caleigh Hallink-Irwin is manager, crop protection, Canadian Horticultural Council.



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CROP PROTECTION

Cleanfarms names regions for fall pick-up of unwanted pesticides

Cleanfarms has named the locations of its next regional events to collect unwanted, old agricultural pesticides so that farmers can dispose of these agricultural materials safely and in an environmentally responsible way.

In the fall, the Cleanfarms program will run more than 70 events in five regions:

- Northern Saskatchewan – October 4 – 8, at 20 locations
- British Columbia – Okanagan, Interior, Kootenay, October 12 – 22, at 11 locations
- Southern Alberta – October 25 – 29, at 20 locations
- New Brunswick – November 1 – 12, at 11 locations
- Nova Scotia – November 1 – 12, at 11 locations

The crop protection industry, in partnership with the Canadian

Animal Health Institute (CAHI), covers the full cost of operating the program and disposing of the materials responsibly. All of it is managed safely through high temperature incineration.

Cleanfarms rotates the collection program so that events return to regions every three years, based on participant feedback. Collection events are scheduled at local agricultural retailers' locations for ease of access. Information will be continuously updated on Cleanfarms' website under "what to recycle & where". COVID-19 precautions will be in place, as appropriate, based on regional public health requirements.

Materials accepted in the Cleanfarms program include:

- old or unwanted agricultural pesticides (identified with a Pest



Control Product number on the label)

• commercial pesticides for golf courses and industrial and commercial pest control products (identified with a Pest Control Product number on the label)
The program does NOT accept:

- fertilizer, diluted solution, large quantities of unopened product, and treated seed
- needles or sharps, medicated feed, aerosol containers, premises disinfectants and sanitizers, veterinary clinic waste and medications, ear tags, or aerosols

• any other household hazardous waste.

Source: *Cleanfarms July 12, 2021 news release*

Risks to squash bees can be mitigated

On June 29, Health Canada released its proposed special review decisions related to potential risks to squash bee exposure to the neonicotinoids imidacloprid, clothianidin, and thiamethoxam when applied to cucurbits. These plants are part of the gourd family. Examples include pumpkins, squash and cucumber.

Health Canada has determined that the risk to squash bees from the three neonicotinoids studied are considered acceptable when the mitigation measures established in the 2019 pollinator

re-evaluation decisions RVD2019-04, RVD2019-05, and RVD2019-06 are used on cucurbits.

For these special reviews, the department considered available relevant scientific information, including the existing Health Canada assessments on pollinators from 2019, data submitted from registrants, and open scientific literature.

These proposed special review decisions have been published for a 45-day public consultation.

Background

• Neonicotinoids are a class of pesticide used to control insects on a variety of agricultural crops, including as a seed treatment, and on ornamental plants.

• The mitigation measures established in 2019 for neonicotinoid use on cucurbit crops include the cancellation of imidacloprid and thiamethoxam for soil applications, and the reduction of foliar applications to a single pre-bloom application only for clothianidin.

• To be approved for sale and use in Canada, all pesticides must undergo a rigorous science-based



review. Health Canada's Pest Management Regulatory Agency is responsible for pesticide regulation in Canada.

Source: *Pest Management Regulatory Agency June 29, 2021 news release*

The Malathion 85E label has been amended for berry crops

In the midst of berry growing and harvesting season, growers should be aware of label changes for this crop protection product. As Erica Pate, Ontario fruit crop specialist points out, the increased use rate changes of Malathion 85E mean that the product now controls, not just suppresses, spotted wing drosophila.

The label for Malathion 85E has been amended via User Requested Minor Use Label Expansion (URMULE) for bushberries including blueberries

and haskaps (Crop Subgroup 13-07B), caneberries including raspberries and blackberries (Crop Subgroup 13-07A), low-growing berries including strawberries (Crop Subgroup 13-07G) and sweet and tart cherries. The table below summarizes the changes to the label:

The Restricted Entry Intervals (REI) and Pre-harvest Intervals (PHI) remain the same.

Source: *ON Fruit blog June 30, 2021*

Crop	Old rate/1000L water	New rate/ha	Old max number of apps	New max number apps
Caneberry	975 mL	1000–2500 mL	2	2
Bushberry	1L	1000–2500 mL	3	3
Strawberry	1L	1000–2500 mL	2	2
Sweet Cherry Tart Cherry	610–855 mL	855–2500 mL	1	2

UPL launches Natural Plant Protection unit

UPL, a global manufacturer and distributor of biosolutions, is forming a new global business unit called Natural Plant Protection. It's expected to account for seven per cent of total company revenues. The company forecasts that the biosolutions market will grow to US\$10 billion by 2025.

UPL's portfolio consists of natural and biologically derived agricultural inputs and technologies.

NPP, a stand-alone brand, is expected to play a vital role in addressing farmers' pain points – including abiotic stress, soil health, residues and

resistance management – in developed and developing agricultural markets alike.

"Canadian growers spend more than CA\$50 million on biostimulants for all crops and we are excited to provide leadership as we deliver more technology to the market," says Trent McCrea, country head, UPL AgroSolutions Canada.

To explore NPP, visit: www.npp.ag

Source: *UPL June 28, 2021 news release*



GREENHOUSE GROWER

Tomachoc: marketing launch is as inviting as the chocolate-coloured tomato

Top Seeds International has launched the Tomachoc brown tomato. Tois the consumer brand of Top Seeds International, the global vegetable seed company that specializes in the development, production and distribution of innovative, high-quality hybrid varieties.

There are five categories of Tomachoc tomatoes, all of which feature an attractive chocolate colour and an elegant, balanced flavour, ranging from tart to sweet, with a signature hint of umami. Available in different shapes and calibres, Tomachoc can be enjoyed alone as a snack or in salads and its unusual colour makes it a big hit in traditional dishes.

Tomachoc is the result of crossing and hybridization of ancient black tomato varieties originating from the Crimean peninsula in Ukraine, which were spread abroad in the 19th century by Ukrainian soldiers carrying the seeds. Chocolate tomatoes are known for their unique sensory characteristics: a high content of anthocyanins, natural plant-based pigments that give the tomatoes their dark colour, belonging to the class of flavonoids and characterized by strong antioxidant properties; a higher

average content of vitamin C than other tomato varieties and potassium, which has a beneficial effect on blood pressure.

They also have a high brix level, which can reach up to 10 degrees, indicating a good sweetness.

The following Tomachoc tomatoes are available on the market:

- Plum choc tomato: an oval tomato weighing between 80-110 grams, derived from the Cordobesa variety. It comes in clusters of six to eight fruits with a very uniform calibre, high consistency and extended shelf life. The distinctive and innovative shape, which differs from the cylindrical shape commonly found on the market, has an intense green colour tending to black when ripe and a high lycopene content. Perfect for salads, it has a pronounced umami taste and a 5 to 6 degree Brix.

- Mini-plum choc tomato: like Plum choc, it features an elongated oval shape, but has a miniature calibre of 30-35 grams depending on the variety. The range includes: TOP Zohar, one of the best-known, is a striped tomato with an intense green colour and an attractive dark red

flesh, ideal as a daily snack. It is distinguished by its sweet, refreshing flavour, which contains nutritional elements such as lycopene and antioxidants; TOP Lotz is an oval tomato with green stripes that is slightly rounder and has a different cultivation cycle. Featuring an intense sweet taste, it has many nutritional properties; finally, TOP 2400, the slightly larger variety. A tomato with a tasty character, well balanced between sweetness and acidity, a unique flavour noticeable from the first bite. This healthy tomato is excellent served fresh.

- Snack choc tomato: the smallest of the oval-shaped Tomachoc tomatoes, it is intended as a snack due to its 18-20 gram calibre, which derives from the TOP Tiana variety. Featuring a rich, bright dark colour, it has an unmistakable flavour between sweet and salty. Thanks to its good leaf coverage and attractive shape and size, it maintains a dark, mottled colour even in high heat and radiation conditions. 10.6-11 degree Brix.

The range is completed by two round tomatoes:

- Round choc tomato: a tomato derived from two well-established varieties that have been cultivated for many years: Shir, with a



calibre of 80-100 grams and Quinto, with a calibre of 70-100 grams. It is a round choc tomato characterized by its intense brown colour with dark green shades and a flavour with a slight hint of umami. Packed with health benefits, it is recommended for consumption both fresh and cooked.

- Cherry choc: a cherry tomato derived from the TOP Zmira variety, characterized by a small calibre of 25-30 grams. The peel is mottled with dark green and red and has a high content of lycopene and carotenoids, as well

as excellent organoleptic properties. Juicy and crispy, with a high Brix level, it is ideal as a snack.

Top Seeds International is an international company specializing in research and marketing of innovative hybrid varieties of high-quality vegetables. Founded in Israel in 2003, it operates worldwide through companies in Spain, Italy and Mexico.

Source: Top Seeds International June 29, 2021 news release

Long-haul electric vehicles investigated to advance energy-efficient shipping

Nature Fresh Farms and the University of Windsor are looking into cleaner transportation. A new \$160,000 project will determine the impact of long-haul electric vehicles on Ontario's electric grid.

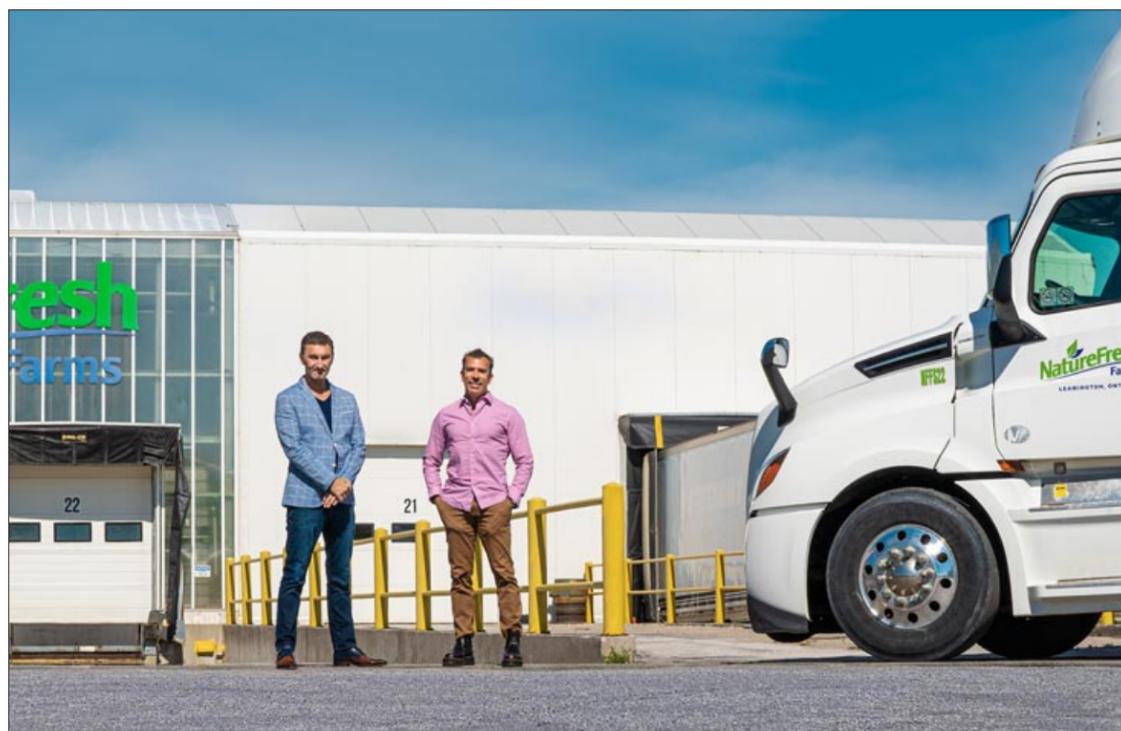
The researchers will create an archetypal routing network by determining the most frequently traveled routes and then overlay the electric grid which will help determine how it will perform when managing a fleet of electric trucks.

As battery-operated trucks, they will look, haul, and perform similarly to diesel trucks but with zero emissions. By drawing power from the electric grid, the transport trucks will not only be able to sustainably deliver goods but also allow for the transfer of

electrons back to the grid at strategic locations and times.

The project is spearheaded by Dr. Rupp Carriveau, of the Environmental Energy Institute, and his associate Dr. Hanna Maoh, of the Cross Border Institute, with the assistance of several graduate students. In addition, they are developing various industry-related partnerships that will assist in different facets of their project, including Nature Fresh Farms.

"As an innovative company we are always thinking 'what is next?', whether it's developments in product varieties, technology, or sustainability," says Peter Quiring, CEO, Nature Fresh Farms. "Green transportation is the next big focus." "We were given the opportunity



to work closely on this project and offer our operations as a case study to see how we can find feasible alternatives, not only for Nature Fresh Farms or even for companies in agriculture, but for

every industry that relies on the transportation of their goods." Phase two is the potential pilot study of developing and using electric long-haul vehicles for that grid.

Source: Nature Fresh Farms July 5, 2021 news release

GREENHOUSE INNOVATION FOCUS

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