THE GROWER

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STATE OF RESEARCH

Wired for launch

Events by invitation-only became the norm in 2020 as the pandemic curbed in-person contact. The impacts of COVID-19 on research, new product launches and extension efforts will be felt for years to come. Here, a clutch of industry specialists inspects a fungicide trial in a Beamsville, Ontario vineyard. L-R: Ryan Brewster, Brewster Consulting Services; Scott Hodgins, Cohort Wholesale; Scott Wright, Vineland Growers' Co-operative; Wendy McFadden-Smith, tender fruit and grape IPM specialist for the Ontario Ministry of Agriculture, Food and Rural Affairs. Photos by Glenn Lowson.

KAREN DAVIDSON

"Do you see powdery mildew? I don't see powdery mildew."

That's typical in-the-field banter. But this conversation was special. It involved a select group of industry influencers, all of whom were delighted to be in a sun-splashed Niagara vineyard in late August 2020. In what has become a rare event these days, five invitees were eyeballing scientific trials by Cohort Wholesale of a new grape fungicide that's in queue for registration.

Adhering to strict COVID-19 protocols as directed at the time, Cohort Wholesale proceeded with fungicide trials on several sites across Canada, showcasing control of powdery mildew on grapes and cherries. As a new player in distributing crop protection products, it was critical to gather data and provide Canadian experience for a product that's already been registered in the United States.

The company worked only with grower cooperators where health and safety protocols could be respected by both parties throughout the season without disrupting the grower's business.

"Our pre-registration fungicide trials went ahead as planned but we couldn't travel to our sites outside Ontario," explained Scott Hodgins, manager, Cohort Wholesale. "In those cases, we were fortunate to have great research cooperators who went above and beyond sharing their observations in-season as well as more photos and videos than they may have otherwise."

This change, one of many during the COVID-19 reality, further complicates the long lead times of research. Generally, it takes a decade to identify and develop a molecule for market at an investment ranging from $250-$300 million. Such costs are likely to rise as two trends collide: mergers and acquisitions of crop protection companies over the last two years have slowed decision-making and COVID-19 fall-out continues to restrict the agility of local retailers.

Unlike other sectors which have pivoted to e-commerce, growers have been hesitant to order crop protection inputs online because they value the agronomic advice of their retailers tailored to their individual farms. The industry is now at a key crossroads of how new products and technology will be delivered to end users and who has the credibility to deliver them.

"There are a lot of new fruit and vegetable products being introduced right now, including both conventional synthetic pesticides as well as biopesticides," said Hodgins. "At Cohort Wholesale, our role, on behalf of our supplier partners, is to work with farmers to help them understand not only how these new products work but also how they work together with existing products and where each of them fit into the farmer's management strategy."

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AT PRESS TIME...

Trinidadian seasonal worker Ricardo Sookhoo is employed at Eek Farms, King Township, Ontario.

Trinidad & Tobago seasonal workers stranded in Ontario

For inexplicable reasons, the governments of Trinidad and Tobago are not repatriating hundreds of their citizens in the midst of the COVID-19 pandemic. There are 385 workers from the eastern Caribbean islands who want to go home but were stranded in Ontario as of December 16, 2020.

On that date, the federal government announced it is working directly with employees, employers and the Government of Trinidad and Tobago to ensure that the immigration status of affected workers is extended. The Ontario ag minister, Ernie Hardeman, announced provincial and federal governments are channelling funds to farmers to help provide housing, meals, winter clothing and other necessities. It will also provide funding for some communications, such as internet.

To expedite payments, the two governments are working to add a targeted, special category of funding under the federal-provincial Enhanced Agri-Food Workplace Protection Program that will help farmers cover incremental costs incurred to ensure the health and safety of stranded temporary foreign workers from Trinidad and Tobago.

Eligible expenses would include accommodations, meals, winter clothing, heaters, equipment, PPE, cleaning supplies, communications, and transportation costs. Following the extension of their immigration statuses by the federal government, the Ontario government has also extended health coverage to assist these workers.

Ministry staff will contact eligible farmers with more details. In the meantime, farmers can contact the Agricultural Information Contact Centre for more information at 1-877-424-1300 or ag.info.omafra@ontario.ca.

"It is unfortunate that circumstances beyond farmers' and the Canadian government's control have led to delays for some seasonal agricultural workers to return to their home country," said Bill George, chair, Ontario Fruit & Vegetable Growers' Association. "As the safety and wellbeing of these individuals are our primary concern, we appreciate the efforts of the Canadian and Ontario governments to ensure they have continued access to essential services such as health care, as well as making funding available to employers who are undertaking additional efforts to house and support these individuals until such time they can return home."

NEWSMAKERS

Hats off to all the Canadian growers who are pledging their time to serve on commodity and association boards in 2021!

The Ontario Potato Board welcomed one new director for 2021: **Jacob Vander Zaag**. The remainder of the board remains. **Shawn Brenn**, chair; **Harry Bradley**, vice-chair; **Brad Blizman**, **Jamie Lundy**, **Steve Bradley**.

The Ontario Apple Growers have elected their 2021 slate of directors. **Cathy McKay**, chair; **Brian Rideout**, vice-chair. Directors are: **Keith Wright**, **Chris Hedges**, **Joe Van de Gevel**, **Brian Gilroy**, **Kyle Ardiel**, **Art Moyer**, **Robert Shuh** and **Manus Boonzaier**.

Tom Miedema has been re-elected as chair of the Fresh Vegetable Growers of Ontario. He is joined by **Mark Srokosz**, **Mark Wales**, **John Hambly**, **Henk Droogendyk**. **Don Almas** (crucifer crops); **Ken Collins** (low acreage); **Teresa Van Raay** (root bulb and leafy greens); **John Beardsley** (tomatoes and peppers).

The Potato Growers of Alberta have elected **Russ Van Boom** as chair. He is joined by **Tony Bos**, vice-chair and the following directors: **Lyndon Nakamura**, **Jeff Ekkel**, **James Bareman**, **JP Claassen**, **Alsion Davie**.

Dr. Justine Taylor, science and government relations manager for the Ontario Greenhouse Vegetable Growers, is leaving after 10 years of dedicated service. She's moving to CropLife Canada, effective January 4, 2020 to take on the twin role of director of stewardship and sustainability as well as executive director, Agrichemical Warehousing Standards Association.

The British Columbia premier announced his NDP government on November 26, keeping **Lana Popham** (MLA, Saanich South) in her role as minister of agriculture, food and fisheries. She's been in the role since 2017.

The British Columbia Produce Marketing Association has bestowed its Lifetime Achievement Award on **John Anderson**, chair, CEO and managing partner, of The Oppenheimer Group (Oppy). During 45 years, he has led the grower, marketer and distributor of fresh produce through many transformations, the most significant of which was spearheading Oppy's in-house ERP software. Today, it's a billion-dollar company with increasing international operations.

The annual general meeting of CanAgPlus, the not-for-profit corporation that owns and operates the CanadaGAP Program, was held virtually on December 2, 2020. Two new and two returning directors were elected to the CanAgPlus board. They are: **Alvin Keenan**, Rollo Bay Holdings, **Jody Mott**, Holland Marsh Growers' Association, **Susan Ranck**, Ranck and Associates, **Scott Wright**, Star Produce.

The 2021 chair is **Stephanie Lariviere**, Ontario Greenhouse Vegetable Growers/Erie James Ltd. Remaining directors are: **Robert Allard**, Pommes Philip Cassidy; **Ian McDonell**, Show Road Solutions; **Beth Patillo**, Noggins Corner Farm. Thanks are extended to director **Cathy McKay** (chair of the 2020 Stakeholder Advisory Committee) and director **Mike Furi** (vice-chair of the 2020 board of directors) who are retiring from the Board.

Congratulations to **John E. Peller**, Grimsby, Ontario who was appointed to the Order of Canada by the Governor General of Canada. He is recognized for leading and expanding the family's wine-producing company and for his outstanding contributions to the Canadian wine industry.

The Prince Edward Island Potato Board has elected **Wayne Townshend** as the new chair. He's a seed and table potato grower from Fortune Bridge. He's joined by vice-chair **John Visser**, Crapaud and secretary-treasurer **John Griffin**, Elmsdale. New directors are **Mary Gillis**, **Rob Green** and **Michael Ramsay**. Remaining directors are: **Mark MacMillan**, **Billy Cameron**, **Jason Hayden**, **Chad Robertson**, **Becky Townshend**, **Donald Stavert** and **Craig Wallace.**

Congressman **David Scott**, based in Atlanta, Georgia, has been approved by the Democratic Caucus to serve as the first African American chair of the House Agriculture Committee.
Tom Vilsack has been nominated to become the agriculture secretary in the new U.S. administration. As a former Iowa governor, he was tapped to hold that role in the Obama government, a position he kept for eight years.

COVER STORY

Wired for launch

As the life cycle of some products are terminated or others have restricted uses, growers are left with fewer tools to fight against pests and disease – and we need new ones.

~ CHRIS DUYVELSHOFF

Continued from page 1

Wired for product launches, crop protection companies will likely see most timelines pushed out as the Pest Management Regulatory Agency (PMRA) tries to cope with examining data for new registrations and re-evaluations under COVID-19 protocols.

"There's a domino effect here," explained Chris Duyvelshoff, crop protection advisor, Ontario Fruit and Vegetable Growers' Association (OFVGA). "As the life cycle of some products are terminated or others have restricted uses, growers are left with fewer tools to fight against pests and disease – and we need new ones."

Before the pandemic, the Pest Management Centre (PMC) supported research for label extensions for minor uses. In yet another brake to the registration process, the PMC was not able to conduct its usual 37 projects at Agriculture and Agri-Food Canada (AAFC) research centres. Due to safety protocols, only about 40 per cent of the trials went forward, pushing the majority of work out a year.

It's important to note that PMC conducts this research because registrants have no incentive for very small markets. Duyvelshoff cited the example of about 2,000 acres of raspberries in British Columbia and the need for pest control of spotted wing drosophila. If there was industry consensus through the minor use priority setting process, PMC could conduct trials for efficacy and residue data. But the likelihood of that happening is now delayed.

"There's going to be a big impact going forward," said Duyvelshoff. "Only 10 new priorities have been selected for the minor use program in 2021. It's going to take a number of years to work through the backlog because we're still not at full research capacity in 2021."

Funding for research will be unplugged in other surprising ways. Some of the revenues earned from the Ontario Fruit and Vegetable Convention are normally funnelled back to the Niagara Peninsula Fruit and Vegetable Growers' Association which then dispenses funds to approved research. With the 2021 event cancelled, that stream has dried up.

Fewer research projects, no events, less money – it's a challenging time for a researcher and extensionist such as Dr. Wendy McFadden-Smith. She's the grape and tender fruit IPM specialist for the Ontario ag ministry.

"You can only go so far without face-to-face events," said McFadden-Smith. Attendance at Zoom meetings is sporadic. Virtual tours are hit-and-miss. So she's blogging and sending her extension advice through several channels.

Along with the COVID-19 vaccine, there seems to be a bright light for 2021. That's her research plans for a weather-based model for detecting mealybug populations, funded by Ontario Grape and Wine Research Inc. with additional support from the Marketing and Vineyard Improvement Program. Her research into strategies for mitigating red blotch virus in grapes is funded by the Canadian Grape Certification Network.

Thanks to provincial funding, her hope is to hire three students and a research assistant for the upcoming summer. The entire industry will be cheering when the next grape industry tailgate tour is announced. Date – and year -- to be determined.

The Grower goes "Behind the Scenes" with Scott Hodgins, manager, Cohort Wholesale. He explains how the distributor adapted to the COVID-19 security needs in terms of demonstration trials. And he forecasts some of the impacts going forward. This series is sponsored by BASF Agricultural Solutions.

Breeding research inches towards the sweet spot for fresh grapes

The volume of the Coronation grape crop was down 31 per cent in 2020 versus 2019, explains Sarah Marshall, general manager, Ontario Fresh Grape Growers' Marketing Board. But the good news is that it sold out within five weeks at slightly higher prices.

Loyal followers of the tart/sweet flavour of Coronation grapes are what motivate research for newer fresh seedless grape varieties that could add a local touch to the Thanksgiving table. That's the hope of breeders at the Vineland Research and Innovation Centre (Vineland) and Ontario's Fresh Grape Growers' Marketing Board. Thanks to government grants, research on new fresh grape varietals is moving forward.

"We are looking to increase market share through season extension beyond the typical Coronation marketing window of mid-August to end of September," Marshall says. "The idea is to enter new marketing segments such as seedless green, red and specialty grapes."

Partnering with Vineland, the marketing board is operating with a federal Agriscience grant that runs through to March 31, 2023 to test new varieties from other breeding programs similar in climate.

The first promising blue seedless variety is still a few years away from commercial production. The launch depends on increased plantings and optimal packaging. It is hoped that funding can be obtained to help with branding and consumer-facing sampling costs in 2021.

Sarah Marshall, general manager for the Ontario Fresh Grape Growers' Marketing Board, is excited about the potential for a new fresh table grape. This trial plot was photographed at the Vineland Research and Innovation Centre in August, 2019.

"New varieties must be grower-friendly and not increase labour costs," explains Marshall. "Seedless is our primary focus and green/red varieties are the next target beyond the new blue."

CROSS COUNTRY DIGEST

BRITISH COLUMBIA

Tree replantings shift to cherries

British Columbia's $8.4 million, seven-year tree fruit replant program has been popular since it was announced in November 2014. The BC Fruit Growers' Association (BCFGA) received 118 applications for the 2021 replant program, with a clear shift towards cherries.

As expected, there is a large changeover in acreage due to recent low apple returns to growers, says BCFGA general manager, Glen Lucas.

The original goal of the program was to replant 1,500 acres of orchard by 2021 with high-value, consumer-targeted varieties such as Ambrosia apples and late-season cherries.

Source: BC Fruit Growers' Association newsletter

	Removed (acres)	Replant (acres)
Apple	387	72
Cherry	38	312
Pear	18	7
Peach	12	28
Plums, Nectarines, and Apricots	9	18
Total	463	437

ONTARIO

Fresh market vegetable insured acres for Ontario the highest yet in 2021

For those Ontario vegetable growers who bought production insurance in 2020, it was one less worry in what turned out to be a risk-filled year.

There were more acres insured this year in the Fresh Market Vegetable Acreage Loss (FMV-AL) plans – 18,871 – than in the last four years for a total liability of $48.13 million. (See chart) Claims to date are $3.14 million. However, Agricorp is expecting claims to be similar or a bit higher compared to previous years. These year-to-date statistics were shared by Arlie McFaul, senior industry specialist for Agricorp, at the annual general meeting of Fresh Vegetable Growers of Ontario.

Late frost events across Ontario in May as well as an early killing frost across Ontario in September resulted in claims along with drought, excess heat and excess rainfall.

Last spring, planting date extensions were approved by government partners for yellow onions (seed, set) from May 15 to May 22. Onions (Spanish) earned an extension from May 20 to May 27.

The governments of Canada and Ontario announced a new peril for production loss due to on-farm labour disruptions caused by COVID-19 and was added to Production Insurance customer policies for 2020. Claims are currently being finalized. To date, the biggest claims were in root crops such as carrots and onions, with claims of $1,060,509. Fruiting crops such as tomatoes and peppers suffered losses with total claims to date of $1,016,132. Growers of leafy vegetables filed claims of $968,529. (see chart)

In total, Agricorp offers production insurance under FMV-AL to 37 commodities and 113 crop classes. As McFaul explains, this basket approach to pool like crops into four plans enables lower and more stable premium rates. These premium costs are shared, with government covering 60 per cent of the premiums and 100 per cent of the delivery.

One feature of the production insurance FMV-AL is that there is spot loss protection that applies on a per acre basis versus total acreage. In addition, growers have the flexibility to manage coverage and cost to weather risks specific to their individual farms. An example would be hail and/or frost coverage versus multi-peril coverage. In addition, the program offers separate coverage for multiple plantings.

Fresh vegetable growers can also insure in traditional yield-based plans as well. These offer great total production coverage for onions, peppers, potatoes, carrots, and rutabagas.

FMV-AL statistics, 2017-2020

Fresh Market Vegetable – Acreage Loss

	2020	2019	2018	2017
# Customers	114	111	119	114
# contracts	137	128	135	136
Acres	18,871	17,641	17,032	15,328
Total liability	$48.13 M	$46.00 M	$33.07 M	$29.90 M
Total premium[1]	$4.54 M	$4.30 M	$3.14 M	$2.66 M
Claims	$3.14 M	$3.76 M	$3.78 M	$3.58 M

M=Million [1] includes both government partners and growers premiums

2020 FMV-AL plan details

Plan	Contracts	Acres	Liability ($)	Claims ($)
Root	49	9,138	21,692,094	1,060,509
Fruit	55	5,891	17,607,629	1,016,132
Leafy	20	2,698	7,138,780	968,529
Other	13	1,144	1,693,516	92,116
Total	137	18,871	48,132,019	3,137,286

If an insured peril causes actual yield to fall below your guaranteed production, a production claim may be paid on the difference.

Deposits due February 1 for SDRM

Agricorp reports that in Ontario, there are 2,548 edible horticulture customers for the Self-Directed Risk Management (SDRM) program. Growers are urged to submit deposits by February 1, 2021 or within 90 days after the date on the deposit notice whichever is later. Just as a reminder, when the provincial government matches dollars, then it is taxed at this point so there is no incentive to leave any dollars in an SDRM account. The Ontario government announced an increase in available funding for the Risk Management Program (RMP), from $100 million to $150 million, starting with the 2020 program year.

CROSS COUNTRY DIGEST

PRINCE EDWARD ISLAND

PEI seed potato sales suspended to U.S.

KAREN DAVIDSON

Just two spores of potato wart on one Prince Edward Island farm has put the seed potato sector offside with its U.S. export market. The quarantinable disease was confirmed by the Canadian Food Inspection Agency (CFIA) on October 16, 2020.

"What was found were two spores in a soil sample taken as a prerequisite to ship seed into the United States," explains Kevin MacIsaac, general manager, United Potato Growers of Canada. "The next step is to use a test to determine if those spores were actually alive or were shed as a casing at some previous point. This will take some time."

CFIA has confirmed that those results won't be available until February 2021. In a statement to **The Grower,** CFIA said: "The testing of source fields that supplied the seed potatoes for the positive fields in 2020 has been completed and they are negative for potato wart."

The farm in Queens County, the largest county of the island, has been secured as part of the protocol to prevent potential disease spread. While potato wart is of no risk to consumers or food safety, the fungus can seriously disfigure potatoes and threaten their marketability. To date, no seed potatoes from the 2020 harvest have been shipped from the farm, nor is the farm allowed to move potatoes to other locations.

The news has sparked concerns from the National Potato Council in the U.S. to the extent that Prince Edward Island suspended any seed potato shipments as of November 20, 2020. This action has not affected the flow of fresh potatoes or potatoes destined for processing. To date, there are no changes in inter-provincial movement of seed potatoes to other Canadian provinces.

The National Potato Council CEO Kam Quarles, stated in a November 28, 2020 news release: "We are in communication with APHIS regarding CFIA's ongoing survey work to comprehensively determine the level of threat within Canada and are also urging CFIA to prohibit all domestic seed shipments out of P.E.I. to prevent spread within Canada until they can confirm no other farms have been jeopardized."

In response, David Jones, manager, Canadian Potato Council says: "It is our understanding that the CFIA is not considering suspending domestic seed shipments from PEI and has no reason to do so based on precedent. The CFIA has taken immediate action on the detections in PEI according to procedures specified in the Potato Wart Domestic Long-Term Management Plan, by implementing regulation of the primary, associated and contact fields, initiating contact tracing and conducting soil sampling. These actions are appropriate for managing a quarantine pest detection with the continued domestic movement of seed."

Jones added, "It should be pointed out that the U.S. allows the free interstate movement of seed potatoes after the detection of the quarantine pest Potato Cyst Nematode in Idaho and New York. It's the same for Canada."

Headquartered in Charlottetown, PEI, MacIsaac adds more context, recalling industry experience as far back as 2000.

"I feel it was much more difficult back then because we did not have a protocol in place if anything was ever discovered," says MacIsaac. "I am more confident with the workplan put in place and carried out over the succeeding years to deal with any pest findings. However, we must continue to work hard at focussing the discussions on fac-based evidence and not on any political swaying."

MacIsaac underlines that time is ticking. Potatoes in some southern areas of the United States are ready to be planted and require Canadian seed varieties to meet optimal planting conditions.

Bilateral discussions with the U.S. are underway to address any concerns and resume trade as quickly as possible.

According to Canadian statistics, Prince Edward Island potato seed exports to the United States for the 2018-2019 crop year were valued at $5.2 million (Source: AAFC Potato Market Information Review).

Sources: Canadian Potato Council, United Potato Growers of Canada, Canadian Food Inspection Agency.

HOUSING SURVEY

Growers estimate at least $20,000 to replace each bunkbed with alternative housing

STEFAN LARRASS AND KEN FORTH

There are a few things that all agricultural Temporary Foreign Workers (TFWs) have in common, regardless of whether they arrive in Canada through the Seasonal Agricultural Worker Program (SAWP) or through the year-round Agricultural Stream of the TFW Program. One of them is that their employers are required to provide housing.

So when the federal government announced in July 2020 that it would pursue a new mandatory federal standard for TFW housing, it was clear that this move had the potential to affect many growers. The government's detailed draft proposal was revealed in late October 2020, giving stakeholders roughly two months to assess the proposal and respond.

In Ontario, a survey was conducted jointly by the Ontario Fruit and Vegetable Growers' Association (OFVGA), Foreign Agricultural Resource Management Services (FARMS) and the Labour Issues Coordinating Committee (LICC). We know that other provinces have performed the same outreach. Growers volunteer considerable time in responding to surveys, but in this case, their feedback has proven critical to a federal consultation that could have one of the largest impacts in horticulture in recent history.

For instance, the survey asks about the anticipated impact of phasing out the use of bunkbeds. The survey responses allowed OFVGA to estimate the cost at an average of about $20,000 per worker "displaced" as a result of such a measure, in order for employers to secure alternative sleeping and housing for the worker. The survey results also made it clear that thousands of workers would potentially be affected by such a measure and that the cost of finding alternative housing for the displaced workers would be in the tens of millions or even hundreds of millions of dollars across the industry.

Growers also indicated that obstacles to compliance include access to financing, obtaining municipal and provincial (e.g. environmental) permits, securing building materials and lining up contractors. The timelines for these steps already typically take years – and with COVID-19 -- government and private sector services are even more difficult to access in a timely way.

Additional hurdles, growers pointed out, include being land-locked in restrictive municipal zoning areas such as Ontario's Greenbelt where additional housing cannot simply be built on their land.

This far-ranging input was consolidated by OFVGA and FARMS to meet the federal government's deadline in mid-December. It was encouraging to see the coordinating efforts of several other organizations, including the Canadian Horticultural Council and the Canadian Federation of Agriculture.

Time will tell what the next phase of the process will look like as the federal government pursues its commitment to a federal standard. Regardless, it will be critical for growers and associations to work together to respond with a strong voice. It is for the government's and the public's own benefit that we do so. Many growers have indicated that an onerous outcome to this consultation would push them out of farming, putting at risk our domestic food security. It is the responsibility of all parties to recommend a solution that sustains our edible horticulture sector.

Stefan Larrass is policy advisor for the Labour Issues Coordinating Committee. Ken Forth is president of Foreign Agricultural Resource Management Services (FARMS).

BUSINESS RISK MANAGEMENT PROGRAMS

Improvements to AgriStability are on the table

KAREN DAVIDSON

The crisis of COVID-19 has prodded the federal government to respond to long-standing requests of agricultural associations to bolster business risk management programs. At the recent federal-provincial-territorial agriculture ministers' virtual meeting, the Hon. Marie-Claude Bibeau proposed concrete changes to AgriStability that include:

• The removal of the reference margin limits (RMLs)
• No change to the AgriStability trigger of 70 per cent but an increase of payment levels from 70 to 80 per cent
• With consensus from two-thirds of the provinces, and two-thirds of agricultural production, that these changes would be retroactive for 2020.

The federal government's analysis has shown that the removal of the reference margin limit would increase support for farmers in need across Canada by more than 30 per cent, and that both of the aforementioned changes would increase spending by more than 50 per cent.

The Canadian Federation of Agriculture (CFA) responded favourably, saying that Minister Bibeau is the first minister to deliver real action on this issue since 2013. CFA is urging that all levels of government finalize an agreement over the coming weeks.

"AgriStability has not provided a sufficient financial backstop for farmers since the cuts were made in 2013 and these shortcomings have been magnified by the impacts of COVID-19 on the industry," said Mary Robinson, CFA president. "Canada's Business Risk Management programs no longer reflect the risk profile of Canadian agriculture and must be improved."

Robinson continued: "CFA is very supportive of the proposed increased support put forth by Minister Bibeau. Our farm supports are still lagging far behind the EU and US. While these proposals are not exactly what we were seeking, they are a very positive step forward for the business environment of Canadian agriculture."

The response is more mixed from the horticultural sector given the diversity of crops. As Stefan Larrass, policy advisor, Ontario Fruit and Vegetable Growers' Association explains, there's a modest net gain relative to the status quo for greenhouse vegetable and tree fruit growers.

"Their AgriStability reference margins are rarely impacted by the program's RML feature in a material way, so they would hardly benefit from the RML's removal, although they would still benefit from the increased payment rate," says Larrass. "By comparison, the relative net gain for commodities that are regularly affected by the RML – for example, some field vegetables, grapes and potatoes – is likely to be higher."

Larrass, who chairs the Canadian Horticultural Council's busines risk management working group, concludes that on the whole, the proposal is of net benefit since it would undo a negative policy (RML) that has been discriminating between commodities since 2013. "Now we can all face the common goal of increasing the trigger to 85 per cent."

At press time, it's not clear what the timelines are for provinces to provide feedback to the federal government.

Source: Canadian Federation of Agriculture November 27, 2020 news release

CANADA'S FOOD PRICE REPORT

Higher prices of fruits and vegetables predicted for 2021

"COVID-19 has made our entire food supply chain more open, and frankly, more democratic. With e-commerce, most agri-food companies, from farm to retail, now have equal access to consumers."

Making half your plate fruits and vegetables will cost more in 2021. A cross-country team led by Dr. Sylvain Charlebois from Dalhousie University says that fruit prices will be up two to four per cent, and vegetable prices will trend higher at 4.5 to 6.5 per cent.

Overall, a basket of food for a family of four is expected to cost $13,997 in 2021, up $695 (5%) from 2020 excluding food service. In dollars, this is the highest predicted increase by Canada's Food Price Report. The food inflation rate in 2021 is likely to outpace the general inflation rate.

2021 FOOD PRICE FORECAST

Food Categories	Anticipated Changes (%)
Bakery	3.5% to 5.5%
Dairy	1% to 3%
Fruits	2% to 4%
Meat	4.5% to 6.5%
Other	2% to 4%
Restaurants	3% to 5%
Seafood	1.5% to 3.5%
Vegetables	4.5% to 6.5%
Total Increase in Food Prices	**3% to 5%**

The 2021 Canada's Food Price Report was compiled by Dalhousie University, University of Guelph, University of Saskatchewan and University of British Columbia.

MICROECONOMIC DRIVERS FOR CANADA'S FOOD PRICES IN 2021

Variables	Categories	Impact[41]	Price Effects[42]	Likelihood[43]
Macro-Level	Climate Change	Very Significant	Variable	Very Likely
	Geopolitical Risks	Very Significant	Variable	Very Likely
	Input Costs	Significant	Increase	Likely
	Energy Costs	Moderate	Decrease	Likely
	Inflation	Moderate	Increase	Likely
	Currencies and Trade Environment	Significant	Increase	Very Likely
	COVID-19	Significant	Increase	Likely
Sectoral-Level	Food Retail and Distribution	Significant	Increase	Very Likely
	Food Processing Figures	Very Significant	Increase	Likely
	Policies and Regulations	Moderate	Increase	Very Likely
	Consumer Awareness and Trends	Moderate	Decrease	Likely
Domestic-Level	Consumer Indebtedness	Very Significant	Decrease	Very Likely
	Consumer Disposable Income	Very Significant	Decrease	Very Likely

In 2021, the authors predict the continued effect of COVID-19 on our agricultural chain and global food systems, in addition to the growing impact of climate change. We can also expect to see adaptations in the agri-food chain based on lessons learned from the pandemic, for example, the growth in e-commerce platforms and online services. Other notable events to watch in the food industry in 2021 include the continuing loss of the food manufacturing sector, the national ban on some single-use plastics, continued actions to mitigate the effects of climate change, and the impact of the U.S. presidential election outcome on food policy and on our currency.

Shift from food service to food retail

Before the pandemic, the food retail/service ratio stood at 62/38. In other words, 62 per cent of food budgets were spent on food retail and 38 per cent on food service. Monthly food retail sales in Canada were approximately $7.7 billion compared to $5.3 billion for food service, according to StatCan.

In May 2020, the last month before restaurants started to re-open, the ratio went to 91/9 with food retail generating $7.8 billion in sales in May 2020 versus $891 million in food service. Despite new sanitary measures, we believe the ratio is currently 74/26 approximately, but we do not expect that in 2021 it will return to near where it was before COVID-19.

2021 watch-list items

Overall, prices for all food categories could increase by up to five per cent in 2021 with bakery, meat and vegetables expected to see the largest increases. Note that Statistics Canada reported in 2019 that one in six adult Canadians now live alone, making one-person households the most common household type for the first time in recorded Canadian history.

Source: Canada's Food Price Report 2021

IN THE BIN

Canadian 2020 potato production varied by region

Potato fields in bloom in British Columbia

Potato harvest in full swing at the farm of Homer Vander Zaag, Ontario

Raphaël Savard, quality assurance and supply coordinator with Propur, proudly shows russet potatoes grown in St. Ambroise, Québec.

Potato production in Canada was literally all over the map in 2020. Due to market uncertainty from COVID-19, growers planted 5,000 fewer acres. And then hot, droughty weather trimmed yields further, especially in eastern Canada.

Now that the 2020 crop is in the bin, the estimate is 104,203,000 hundred weight. That's down 1.4 million hundred weight or 1.3 per cent below 2019, according to the topline analysis from the United Potato Growers of Canada (UPGC).

As Kevin MacIsaac, general manager UPGC points out, Canadian yields dropped 13 cwt/acre from 309 cwt/acre in 2019 to 296 cwt/acre in 2020. There is a large regional disparity within this crop from east to west.

New Brunswick suffered the largest decrease in harvest, with all sectors of fresh, processing and seed affected. This was the province's poorest showing in five years. In contrast, Manitoba, with 71,500 acres, had its best harvest in five years averaging yields of 337 cwt/acre.

Here are the provincial highlights:

Prince Edward Island

The province was one of the region's most severely affected by the drought. Stats Canada estimates production is down province-wide by an average of 13.6 per cent compared to the 2019 crop. In addition, there are growers in the central part of the province who experienced reductions of 25-30 per cent. The reduction translates to 3,300,000 hundred weight and affects all categories of production. Yields per acre dropped from 289 last year to 251.5cwt./acre in 2020.

Nova Scotia

Hot dry weather also seared production – down 27.9 per cent from 2019 and reducing yields to 250 cwt/acre. Planted acreage decreased to 1,200 acres.

New Brunswick

New Brunswick's production was down by 29.9 per cent, also due to summer heat. The shortfall is 4,900,000 cwt compared to 2019. Yields were severely depressed to 237.4 cwt/acre compared to 310.6 cwt/acre in 2019. All sectors of seed, table and processing had short supplies.

Québec

Estimates will be revised at a later date when available from the Institut de la Statistique du Quebec. In the interim, Quebec's production is estimated to be up a smidge (1.7%) at 12,868,000 cwt. Yields are estimated to be up from 293 cwt/acre to 312 cwt/acre.

Québec growers experienced a difficult 2020 harvest, leaving 2,000 acres undug.

Ontario

Stats Canada estimates Ontario's production to be up 813,000 cwt or 12.1 per cent to a total of 7,518,000 cwt. Spring acreage increased by 2,500 acres to service demand for chips and fresh potatoes.

Manitoba

Manitoba reports the biggest increase in 2020 Canadian production, up 4,300,000 cwt or 21.8% above 2019. Hot, dry weather took the top off yields, moving from 345.6 cwt/acre in 2019 to 337 cwt/acre in 2020. Overall production is estimated at 24,000,000 cwt. Spring-planted potatoes increased by 1,500 acres bringing the total to the country's second largest acreage: 71,500.

Saskatchewan

Production is expected to be down 6.7 per cent this year with a total production of 1,400,000 cwt. Acreage was pegged at 6,000.

Alberta

Production increased by 7.8 per cent or by 1,689,000 cwt, making it the second largest provincial increase in Canada in 2020. Despite a challenging growing season, yields increased to 404 cwt/acre compared to 382 cwt/acre the previous year. Total production: 23,407,000 cwt.

British Columbia

Total production is expected to come in at 2,155,000 hundred weight. An excellent growing season produced record-breaking yields at 331.5cwt./acre, up from last year's 325cwt/acre.

Source: United Potato Growers of Canada December 5, 2020 news release

Estimate of Canadian Potato Production December 4, 2020

Source: Statistics Canada Table 32-10-0358-01 (000cwt)

Province	2016	2017	2018	2019	2020 Est.	% Diff.
NFLD.	74	63	56	54	55	+1.9%
P.E.I.	25,723	24,463	22,600	24,302	21,000	-13.6%
N.S.	432	432	365	416	300	-27.9%
N.B.	14,335	15,159	15,670	16,400	11,500	-29.9%
Que.	12,233	12,505	11,221	12,648	12,868	+1.7%
Ont.	6,603	7,830	6,919	6,705	7,518	+12.1%
Man.	22,400	22,200	20,300	19,700	24,000	+21.8%
Sask.	1,700	1,625	1,454	1,500	1,400	-6.7%
Alta.	19,519	20,572	21,762	21,718	23,407	+7.8%
B.C.	2,205	1,824	2,100	2,145	2,155	+0.5%
Canada	105,224	106,673	102,447	105,589	104,203	-1.3%

CHAIR'S PERSPECTIVE

Your voice can make a difference

BILL GEORGE JR.
CHAIR, OFVGA

Winter meeting season is now in full swing, and as with so many things in our world right now, it looks a little different - and in some cases a lot different - than in years past.

For many years, the Ontario Fruit and Vegetable Growers' Association (OFVGA) always held its annual general meeting in early January just after the holidays. Several years ago, we shifted it to February so we could better connect with the Ontario Fruit & Vegetable Convention and enable growers who had to travel to the Niagara Region to make just one trip.

This year, the in-person convention will not take place due to the COVID-19 pandemic and we have moved our Annual General Meeting (AGM) online. Meeting virtually is not the same experience by far as getting together face to face, meeting new people and having interesting discussions on a wide range of topics. And yet, it has never been more important for everyone in our industry to participate in this meeting - and indeed, in our association.

Here's why.

At OFVGA, we rely on our board directors, our committee members, and our member organizations to help us shape our lobbying priorities around issues that are common across the sector. As a lobby organization, we always have a slate of issues that we deal with on behalf of growers, some more urgent and far-reaching than others, but all important to the fruit and vegetable business in Ontario.

Some are staples, such as safety nets, labour and crop protection, and others ebb and flow with public opinion and government priorities of the day, such as taxation or reusable plastic containers. We work hard to establish positions on the key issues that reflect industry needs and to make sure those positions are brought to the attention of government.

Sometimes we are effective in bringing about positive change - the recent Pest Management Regulatory Agency decision on keeping Mancozeb available for most crop uses is just one example. And other times, such as the minimum wage battle of a few years ago, we were powerless to stop change.

Thanks to COVID-19, this past year will undoubtedly be remembered as one of the toughest, most challenging that growers in this province and this country have faced in recent memory, and perhaps ever. It's also the year, in my opinion, that more than ever has proven how valuable farm organizations such as OFVGA, Ontario Federation of Agriculture and others are to growers.

Without the strength of the collective voice, it is highly doubtful that we would have seen seasonal foreign agricultural workers come to Canada this year, or have had access to various government programs to off-set pandemic-related expenses, for example.

And that success was due to individual growers stepping forward to make a contribution, whether it was as a board director, section chair or committee member - or even volunteering to take media interviews or be featured in public relations materials at the height of COVID uncertainty during this past growing season.

I'll be honest - it can be a bit of a daunting task to have a leadership role in an organization at the best of times, and even more so during a crisis like a pandemic. But what helped make the task easier was having a great team of growers and staff to support what we were doing, and by working together, we were able to spread out the workload.

I recognize that not everyone has the time or the resources to make a major commitment to a farm organization, but there are other ways to become involved too. Consider signing up to be part of an OFVGA committee, or volunteer as a local director with your commodity organization, for example.

Our industry needs your ideas, your perspectives, and your input as we continue to work our way through the immediate reality of the ongoing pandemic as well as face the changing future COVID-19 is bringing our way.

If you're interested in learning more about what the OFVGA does, why not consider registering for our virtual AGM? The time commitment is less than in previous years since we're meeting online, and it will give you a great overview of the organization, the issues we deal with and how what we do behind the scenes has direct impact on the farm.
I'd love to see you there.

WEATHER VANE

The way we were. In 2016, this mechanical harvester was picking up ice wine grapes near Niagara-on-the-Lake. Vineyard owner Trevor Falk is not doing any icewine this season for the first time in many years. Photo by Denis Cahill.

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THE GROWER

URBAN COWBOY

Chilling food price predictions mark end of dreadful year

OWEN ROBERTS

We're all hoping for better days ahead, trying to forget how awful the past year has been. It's separated us from loved ones, or worse, taken them away forever.

Most of us can't shake off 2020 fast enough . . . except for my sister.

She too has experienced heartbreak this year, living on the other side of the border, unable to cross it to see her kids and grandkids in Canada.

But she's trying to take the high road. She urges us to learn whatever lessons we can from this, the biggest modern-day mess we've ever encountered, and use those lessons to our advantage going forward.

Lessons like budgeting, cooking at home and self-discipline, for example.

I sensed similar advice oozing from Canada's Food Price Report, released in December. The report, which forecasts food prices for the coming year, felt like a punch in the gut. It estimates food will cost families five per cent more -- nearly $700 – than last year. Readers of **The Grower** will be particularly interested to know vegetables, along with meat, are the leading commodities that the authors expect to climb the most, an estimated 4.6- to 6.5 per cent.

The report's co-author and co-spokesperson, Prof. Sylvain Charlebois at Dalhousie University, doesn't mince words. He starkly warns that many families will be "left behind."

The chilling reality, though, is that they already are. From coast to coast to coast, the struggle with food prices is full on. A study this fall from the Canadian Centre for Food Integrity showed prices are consumers' biggest concern about food, surpassing technology and other factors that used to cause angst.

So Charlebois, like my sister, wants people to arm themselves with information and dig in. We know it will be a tough year and that we'll get bowled over if we lie down.

So, he says, be ready. To begin with, cook more at home. So much help is available online to show people how to cook.

As well, be even more disciplined than you already are, about splurging. And finally, he says, do your research.

Research includes bargain shopping. I've always glanced at grocery store flyers, but since the pandemic kicked in, I've come to consume them voraciously. I look forward to the Flyer Thursday email arriving and getting the chance to potentially cash in on sales.

There are other ways to save on vegetables, says the food price project's other author, Dr. Simon Somogyi, who holds the Arrell Chair in the Business of Food at the University of Guelph.
He notes the dilemma we face: Health Canada, along with pretty well every nutritionist you talk to, says eat more vegetables. When prices go up as predicted, that's more of a challenge.

But he sees some light on the horizon. When the Canadian growing season comes online in summer 2021, prices will soften and more families will have access, he says.

For now, though, he says consider frozen foods.

"When folks go to the grocery store, they should have a look in the frozen food aisle, particularly for peas, broccoli, carrots and corn," he says. "Frozen vegetables are snap frozen just after harvest, so their nutrients are locked in. They can be just as nutritious as fresh vegetables, but at a lower price."

We're fortunate that the food supply chain for fruit, vegetables and other commodities works amazingly well. Superb fresh domestic produce is available here during the growing season, and as Simogyi says, later too as frozen products. Greenhouse production is increasing, extending the season and the offerings. We have reliable connections with the U.S., Mexico and other countries – at least, in a normal year – for winter fruit. Even through 2020 we had most of the food we need.

News of COVID-19 vaccine arrivals gave us reason to be optimistic that the worst is behind us, at least from a respiratory health perspective. But indeed, let's heed the warnings and learn from 2020.

Vegetable prices are predicted to go up by 4.5 to 6.5 per cent in 2021. Photo by Glenn Lowson.

> **Prices are consumers' biggest concern about food, surpassing technology and other factors that used to cause angst.**

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

TEST YOUR KNOWLEDGE

Seed quiz tests vegetable and fruit growers

To be of the earth is to know the restlessness of the seed.

This year's annual quiz might be easy for vegetable growers, but more challenging for fruit growers. These photos are a good reminder of how the sizes and shapes of seeds vary, and how they are uniquely equipped to spring forth.

Thanks to Bridget Visser, a seed company territory manager, for assembling these photos far in advance of our quiz special. For answers, and some interesting trivia, go to page 23.

COMING EVENTS 2021

Jan 6-7	Ontario Agricultural Conference Live (SouthWest Agricultural Conference, Guelph and Eastern Ontario Crop Conferences combined) **VIRTUAL**
Jan 6-7	Potato Expo, Gaylord Texan Hotel, Grapevine, TX **LIVE & VIRTUAL**
Jan 13	Nova Scotia Fruit Growers' Association Annual General Meeting, 1-2 pm, **VIRTUAL**
Jan 18-20	North American Strawberry Growers' Association Annual Conference **VIRTUAL**
Jan 21	Producteurs de pommes du Québec AGA, **VIRTUELLE**
Jan 26-28	Manitoba Potato Production Days, Keystone Centre, Brandon, MB **CANCELLED**
Jan 27	Nova Scotia Fruit Growers' Association Annual Convention, **VIRTUAL**
Jan 28-30	Pacific Agriculture Show, Abbotsford, BC **VIRTUAL**
Jan 26 - 30	Guelph Organic Conference Online Seminars, **VIRTUAL**
Feb 8-11	Mid-Atlantic Fruit & Vegetable Convention, Hershey, PA **VIRTUAL**
Feb 16	Ontario Fruit & Vegetable Growers' Association Annual General Meeting, 9 am – 3 pm **VIRTUAL**
Feb 16-17	Berry Growers of Ontario Annual General Meeting and Conference, **VIRTUAL** To register, email: info@ontarioberries.com
Feb 17-18	Ontario Fruit & Vegetable Convention, Scotiabank Convention Centre, Niagara Falls, ON **CANCELLED**
Feb 22-24	International Fruit Tree Association Annual Conference, **VIRTUAL**
Mar 4	Ontario Potato Webinars **VIRTUAL**
Mar 15-18	Canadian Horticultural Council Annual General Meeting, **VIRTUAL**
April 12	Canadian Produce Marketing Association Fresh Week **VIRTUAL**
May 1-5	International Strawberry Symposium, Rimini, Italy
May 18-20	Fruit Logistica Special Edition, Berlin, Germany
May 30-June 3	11th World Potato Congress, Dublin, Ireland **POSTPONED** to May 30-June 2, 2022
June 24-26	United Fresh Convention and Expo, Los Angeles, CA
July 23-29	Potato Association of America, Delta Hotel, Charlottetown, PE
Aug 11-12	AgriExpo, Grands Falls, NB
Sept 23-27	Canadian Farm Writers' Federation Annual General Meeting, Windsor, ON
Oct 6-7	Canadian Greenhouse Conference, Scotiabank Conference Centre, Niagara Falls, ON
Nov 5-14	Royal Agricultural Winter Fair, Exhibition Place, Toronto, ON
Nov 4 -6	Interpoma, Bolzano, Italy
Nov 22-24	Alberta Potato Conference and Trade Show, Cambridge Hotel and Conference Centre, Red Deer, AB

RETAIL NAVIGATOR

Seven trends that will impact 2021

PETER CHAPMAN

Our trends for 2021 have been developed to help better understand your customers and consumers. These are unique because we want to focus on your customers to ensure you know what will be important to them and what you can do about it.

1.The value of food has changed

The events of 2020 did force many people to pause and slow down. One result is that society placed a greater importance on essentials such as food, the people producing it and the people selling it. There were many examples of companies, associations and others in the food industry stepping up to provide food for Canadians. People have been thinking more about food and they value it differently, which is a good thing.

Suppliers need to make sure they are getting a fair price for their products. Costs have changed and you need to move along with them. Production, processing and inputs are costing more. If you have been able to keep supplying your customers and your costs have increased, you need to make sure you are continuing to generate the return required. Plant the seed now if you need to review costs in upcoming months.

2. Canadian and local products are in demand

The demand from consumers for Canadian products has increased. Retailers are also looking for more Canadian products because the service level should be better and they avoid currency fluctuations.

Food producers and processors should be doing a great job telling their story. On social media, on packaging and everywhere else. This is a big opportunity to increase trial and get listings. Make sure you do deliver on service level and send consumers to the store for your products.

3. E-commerce will continue to grow

There is more food being purchased online in Canada than ever. Most estimates put this between 12-15 per cent. In other words, one-eighth of food dollars is being spent online. As execution gets better and confidence grows in someone else picking your broccoli or apples, the convenience and safety of shopping from home will continue. When we get back to more movement and fewer restrictions stores will see people come back but e-commerce is here to stay and now that retailers have invested in it, they will want to see it work.

Producers and processors should explore the option of selling online. Obviously, the category or complexity of your products has a big impact. If selling direct to consumers is not realistic, think about how your product works for your retail partners in this environment. You should also review your customers' websites to check that the photo is correct and to confirm the ease of purchase of your products.

4. Changing priorities for retailers

Your customers changed faster in 2020 than ever. The store environment is different, e-commerce is a major part of their business and in-stock position was much more important. There was more collaboration in the past year to get inventory to the right store than we have seen in years.

You need to evolve with these priorities and make sure your business is focused on them. Help consumers find your products in store with your messaging. They are not shopping categories like they used to. Review your items on your customer's website to make sure they are there and work properly. They will not check every item. Report your service level to each customer and be proactive if you are going to have issues.

5. Consumers shop differently when they are working from home

The items consumers buy are different now. People are looking for something interesting and they actually eat breakfast at home. They are also eating leftovers and making lunch at home.

Provide ideas for consumers to use your products differently. We know they are getting tired of the same old recipes (aren't we all?) so help them out. New options for breakfast will work in this new environment.

6. Millennials are shopping in grocery stores

We know prior to the pandemic, millennials would eat out more than any other generation. With reduced availability and people working from home they are now shopping in grocery stores. My opinion would be they make up a huge percentage of the increase we are seeing in retail sales. They are a big portion of the shift from food service to retail.

They are looking for restaurant quality in the grocery store and most are willing to pay for it. Yes, they will go back to restaurants when they open up again but not in the same numbers. If they ate out three times, perhaps now it will average 1.5 times per week. There are opportunities to satisfy their desire for products that are almost fully prepared. Make sure you leave some work for them so they can say they did it and customized it with their choice of sauce or spice.

7. Service level is key to your success

We are seeing consumers select a store based on their ability to get everything, even if it costs a bit more. One trip reduces their exposure in public. Retailers are very focused on service level to drive traffic and also to maximize the basket while they are in the store.

Increase the awareness in your business for service level and the importance of orders that are on time and in full. Talk to your customers about service level too. Report your numbers. Cases delivered divided by cases ordered is a simple calculation you can do to save them time. They will focus on the problems so if you have a good story to tell, make sure you tell it.

We hope these insights will help you plan and focus your efforts in 2021.

The value of food has changed.

Canadian and local products are in demand.

Millennials are shopping in grocery stores.

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.

GRAPES, VINEYARDS & BERRIES

Weather tracked in real time can point to climate change over time

KAREN DAVIDSON

2020 was a droughty year for much of Ontario's grape-growing regions, but for Bill George, he was tuned into the day-to-day temperatures and precipitation for his specific Beamsville, Ontario location.

His state-of-the-art Davis weather station is one of 35 installed in key grape-growing regions around the province. The 2020 project was organized through the Grape Growers of Ontario (GGO) and funded through the Canadian Agricultural Partnership (CAP).

These weather stations will provide the necessary data to develop sustainable vineyard practices. According to Nick Lemieux, GGO program manager, growers can use the information for spray scheduling, irrigation scheduling and wind machines for frost mitigation.

Debbie Zimmerman, CEO, GGO, adds, "These records, over time, indicate to growers whether irrigation will be required. And on-farm temperatures will indicate when to start up wind machines in the spring to protect from frost. This weather data will even help in identifying where to locate the wind machines."

"As we move into the winter months, growers can use the data to assess the risk for frost and cold injury through the weather alerts functionality built into the Davis stations and now in eGrape," says Lemieux. "They can also use it to determine the proper temperatures for picking icewine which was a problem with the previous network not being real time with slow upload intervals."

The biggest factors for upgrading to Davis weather stations were the amount of maintenance required and the ongoing costs of maintenance.

Their data will feed into the eGrape system, designed as a cloud-based system that allows both growers and processors to quickly enter and access data. Users have a single point of access to the system and are now able to manage their account information, enter data and generate reports with a single password.

"From a grape and wine industry standpoint, eGrape improves traceability by ombining information currently housed in multiple stand-alone systems," says Zimmerman.

Offering a wide range of functionality for growers and processors, eGrape reduces data entry and increases the amount of timely information available. This allows for an end-to-end recordkeeping system to document the provenance of grapes, vine planting information, vineyard characteristics and structures at the block level, as well as detailed records of farm management practices, such as pesticide and fertilizer use, canopy management, irrigation and wind machine use. It contains harvest information from weigh bills, including quantities of grapes, processor, and grape quality metrics.

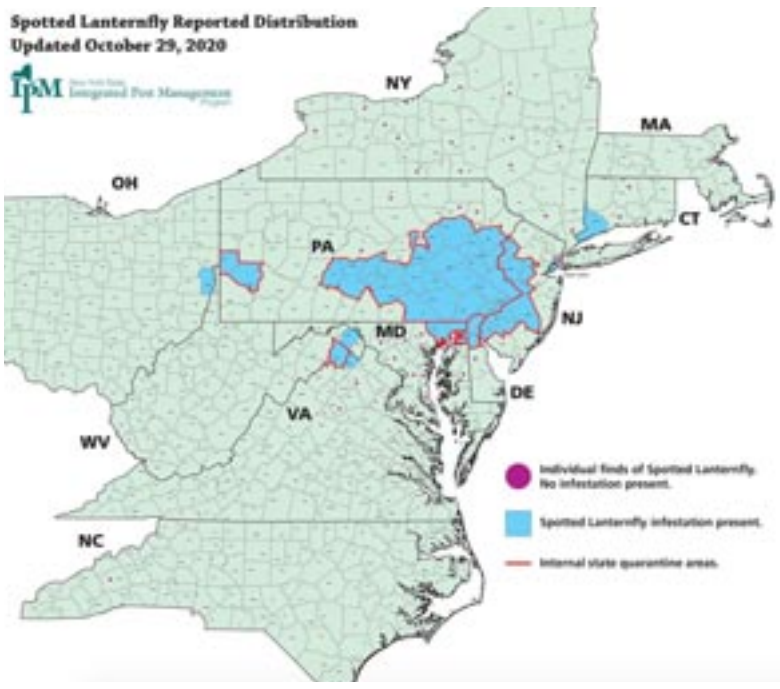
The system also combines spray recordkeeping and other vineyard management modules, weather information, and provides a message board and calendar to improve communication with members.

Moving forward, Grape Growers of Ontario will continue to work toward to improving eGrape's data collection capabilities, and work with all levels of government to further drive innovation and sustainability in the Ontario grape and wine industry.

Bill George, chair of the Ontario Fruit and Vegetable Growers' Association and a grape grower, demonstrates one of the 35 weather stations at his Beamsville, Ontario vineyard. It provides real-time data and offers vineyard crop management tools such as irrigation scheduling. Photos by Glenn Lowson.

GRAPES, VINEYARDS & BERRIES

Spotted lanternfly getting close to Great Lakes borders



Map of spotted lanternfly reports in the northeastern regions of the United States, as of October 29, 2020. (Source: New York State Integrated Pest Management, Cornell University)

CHRIS DUYVELSHOFF

The new invasive pest spotted lanternfly (*Lycorma delicatula*) is coming closer and closer to Canada. Originally from Asia, spotted lanternfly is a planthopper that has been known to feed on a wide range of hosts including horticultural crops.

It was first detected in North America in Pennsylvania in 2014 before spreading to other neighbouring states. While living specimens have not been reported in Canada yet, individuals have been found in nearby western New York counties, not far from the Niagara region border. Infestation level populations now exist in much of Pennsylvania and New Jersey, with localized established populations found even further away in Ohio and Connecticut, with the presence of the insect expanding each year.

Spotted lanternfly has been a regulated pest in Canada by the Canadian Food Inspection Agency (CFIA) since 2018 in an effort to prevent its introduction. In September 2020, the CFIA confirmed the identification of two dead spotted lanternflies on commercial trucks travelling from Pennsylvania to Quebec. No live insects were detected. With similar occurrences happening recently in Michigan, spotted lanternfly is getting closer and closer to entering Canada.

Where spotted lanternfly is established, the crop at highest risk of damage are grapevines. While not directly attacking the fruit, the nymphs and adults will feed on the vine sap, reducing photosynthetic productivity of the plant. Infestations on grapes have resulted in reduced sugar content of the berries, lower cold hardiness of the vines, and reduced yield in the following season. Indirectly, the insects also excrete honeydew promoting the development of sooty mold, also attracting other insects such as wasps and bees. Tree fruit crops may also be at risk from spotted lanternfly, though they do not appear to be as preferable of a host as grape.

Back in Pennsylvania, Heather Leach from Pennsylvania State University reports that 80 per cent of grape growers are now managing for spotted lanternfly. Infestations have reached the point where previously grape growers who were typically applying four insecticide applications per year are now needing 14 applications per year.

Swarm of spotted lanternfly on grapevines. Photo by Erica Smyers, Penn State University.

The annual population numbers also peak in September and October, right in the harvest window of grapes.

There are no registered crop protection products for spotted lanternfly in Canada currently. However, should spotted lanternfly become established in Canada, pyrethroids such as fenpropathrin have been reported to have high efficacy. The minor use program will likely be needed to develop registrations if the insect does become a commercial problem in the future.

Early detection of any spotted lanternfly insects will be crucial to help limit its spread into Canada. Become familiar with the appearance of the insect. Report any suspected individuals immediately to the CFIA by calling 1-800-442-2342.

Chris Duyvelshoff is crop protection advisor, Ontario Fruit and Vegetable Growers' Association.

GRAPES, VINEYARDS & BERRIES

International Cool Climate Wine Symposium postponed to 2022

As the pandemic continues and travel restrictions remain, the organizers at Brock's Cool Climate Oenology and Viticulture Institute have postponed this event until July 17-21, 2022.

Originally scheduled for the summer of 2020, the symposium was delayed until July 2021 but the symposium's advisory committee has opted to further postpone to the summer of 2022.

ICCWS 2022 will serve as a welcome to Canada to a wide range of international guests, pairing rigorous and diverse scientific content about cool climate grape and wine production with opportunities to network, explore the host region and learn more about Canada's diverse wine regions.

Although many conferences have moved to digital formats in the wake of the pandemic, ICCWS 2022 organizers stressed that the spirit of the symposium relies on the opportunity to come together in person.

"Wine is a highly experiential, cultural and sensory product and we want our delegates to be able to experience all that Canada has to offer together in a physical setting," said Debbie Inglis, CCOVI director and ICCWS 2022 Advisory Organizing Committee chair.

> **"Wine is a highly experiential, cultural and sensory product and we want our delegates to be able to experience all that Canada has to offer together in a physical setting."**
>
> ~ DEBBIE INGLIS

"The ICCWS program will deliver cutting-edge academic programming and uniquely Canadian experiences that we cannot wait to share with all of you in 2022."

For interested parties, continue to monitor Brock's ICCWS 2022 and COVID-19 information webpages, subscribe to the ICCWS mailing list and follow ICCWS 2022 on Facebook, Instagram and Twitter for more updates as they become available.

Source: Brock University December 11, 2020 news release

Replant funding to encourage raspberry varieties for fresh and IQF markets

KAREN DAVIDSON

A raspberry replant program valued at $90,000 was the first announcement of British Columbia's re-elected ag minister, Lana Popham. The program is cost-shared with growers, which will result in a minimum of $162,000 of investments in the sector.

These funds will support renewal of at least 25 acres, a small portion of the 1,500 to 2,000 commercial acres of raspberries concentrated in the Fraser Valley. The program limits renewal to no more than 10 acres per grower.

One aspiring applicant is Paul Sidhu, an Abbotsford grower with 40 raspberry acres currently under cultivation. His intent is to apply for the program maximum with BC-bred varieties such as Squamish and Rudi. These early-maturing varieties have multi-uses, but his intent is to aim for the high-end Individual Quick Freeze (IQF) market. Prices range from $1.00 to $1.50 per pound and packing facilities are nearby.

Squamish raspberries

"The cost of planting is considerable," explains Sidhu. "So if the B.C. government can alleviate some of those costs and we can establish newer varieties, there's a chance of getting those higher-end IQF prices."

The replant program has a real chance of reinvigorating a sector that has been flagging in recent years. There's been increased competition in straight pack and purée (processed) markets. Imports of fresh and frozen raspberries have also pressured prices.

The provincial government's immediate priority is to provide cost-share funding for eligible raspberry fields that will be planted in the spring of 2021. Successful applicants will be reimbursed for a portion of their plant costs following planting and a satisfactory field inspection. Most raspberry plants are sourced from nurseries in the U.S.

"We looked at available plant material when designing the program," explains Carolyn Teasdale, berry specialist with the B.C. Ministry of Agriculture. "The funding aligns with the projected number of plants and intent of growers to replant for the upcoming season."

Growers will receive up to $1.50 per plug and up to $1 per bare-root plant to a maximum of $3,300 per acre. Any variety that has fruit-quality traits suitable for fresh or IQF markets and is compatible with B.C. growing conditions are eligible. These varieties may have originated from the Agriculture and Agri-Food Canada berry breeding program or from other regions. The complete list of eligible varieties is provided in the appendix of the program requirements.

Breeding program is bearing fruit

The BC government's largesse is due, in no small part, to the fact that new raspberry varieties have been bred at the Agassiz research station. Dr. Michael Dossett, breeder/geneticist for BC Berry Cultivar Development Inc., describes the attributes of these locally adapted cultivars.

Squamish, in use for about six years now, was originally identified as an early-season replacement for the Malahat variety with better tolerance to Phytophthora root rot and other soil-borne diseases. Further testing has shown that it machine harvests extremely well and that Squamish has potential to be a dual-purpose variety for both fresh and processed markets.

The fruit of Squamish tend to be a little larger and firmer than the Malahat standard with very good flavour. This summer-bearing raspberry produces an adequate number of canes, but these tend to be concentrated around the crown without as much suckering as Meeker and many other older varieties.

Squamish also has resistance to six of the seven raspberry aphid biotypes found in the Fraser Valley, indicating that it may be a bit slower to acquire some of the viruses that have been associated with crumbly fruit. Machine-harvested yields compare favourably with other varieties.

BERRY NEWS

Emerging berry production systems in Ontario

ERICA PATE

Disease, labour, season extension. Any of these issues sound familiar to berry growers? Recently growers in Ontario and Québec have begun to adopt protected, soilless berry roduction systems to address these challenges.

Protected structures such as high tunnels or rain shelters have been used for years to provide season extension for strawberries and raspberries, and protection from the wind and rain. This is becoming increasingly beneficial due to the challenges with disease management. Anthracnose and botrytis are serious diseases that strawberry growers control season long.

However, following recent re-evaluations there are limited fungicide options for anthracnose control, leaving growers with only a couple registered fungicides and an increased risk of developing resistance. Rain shelters and high tunnels provide protection from the rain, reducing the spread of anthracnose and the need for fungicides. Tunnels also provide season extension, with the season beginning earlier and ending later compared to the field season.

Soilless or substrate strawberry production reduces the risk of soil-borne diseases, provides more control over irrigation and fertilizer, and eases the labour demand required for strawberry cultivation. Strawberries grown in soilless systems are grown in containers of various substrates raised off the ground, allowing for easier harvest. Additionally, strawberries grown in these systems have been shown to have higher yields.

Combined, soilless, protected production systems provide multiple benefits to strawberry growers but also come with significant changes to production practices.

A recent study by Depardieu et al. (2018) from Québec looked at the productivity of soilless strawberry cultivation under rain shelters. These rain shelters are more open than high tunnels, covering only one row each, and have a lower cost compared to high tunnels. Studies have found rain shelters provide the advantages of a protected system -- rain protection, reduced disease pressure -- while also providing more ideal climate and humidity levels to manage powdery mildew.

This project used Monterey, and included multiple treatments, including using different substrates as well as starting the plants in the greenhouse before planting them outside under the rain shelters. The substrates used included peat and a peat-sawdust mix. The trough height was set 1 m high, with 10 plants/m.

This study evaluated different substrates, the effect of rain shelters on disease pressure, and the effect of early forcing plants in a greenhouse:

Substrates

Initial interest in sawdust was an attempt to find sustainable alternatives for soilless cultivation. Sawdust has good moisture retention and is fairly low cost, and is an attractive option for regions with large forestry and wood processing industries. The peat-sawdust mix initially resulted in lower yields, which was attributed to nutrient immobilization in the sawdust. The fertilizer load was subsequently doubled for the following season, which resulted in similar yields between the peat and peat-sawdust treatments. With similar growing potential between peat and peat-sawdust mix, a peat-sawdust mix could be a popular, cheaper option for Canadian growers.

Disease control

Powdery mildew control was improved under the shelters compared to the open field. In high tunnels, powdery mildew is a challenge. The high humidity under the tunnels has led to higher powdery mildew levels compared to open fields. The rain shelters do not have the same high humidity levels as high tunnels, and powdery mildew is subsequently less of a challenge.

Early forcing

Another treatment in this project was early forcing of the strawberries by starting them in a greenhouse before planting them outside under the rain shelters. This method resulted in harvest beginning 13 days and six days earlier in 2013 and 2014. This also resulted in the production peaks occurring at different times, and in fact in this study the production peaks lined up with the periods of high demand in Québec when supply is otherwise low. Although early forcing results in earlier production, the investment required in a greenhouse for this system is very high, and growers should look into alternatives to achieve early production, including low-tech greenhouses, using plug plants, or using other cultivars, such as short-day plants.

Looking for more information on soilless berry production? Register for the Berry Growers of Ontario annual meeting by contacting Kevin Schooley at info@ontarioberries.com to hear from Eric Boot, BVB Substrates, on long cane raspberry production and from Brian Zimmerman, Meteor Systems, on strawberry substrate production. The meeting is being held virtually February 16 and February 17.

References: Depardieu, C., N. Watters, L. Gendron, C. Boily, S. Pepin and J. Caron. 2018. High Productivity of soilless strawberry cultivation under rain shelters. Sci. Hortic. 232: 127–138

Erica Pate is fruit crop specialist, OMAFRA.

BERRY NEWS

Crop-adapted spraying - A three-year study in highbush blueberry

DR. JASON DEVEAU and ERICA PATE

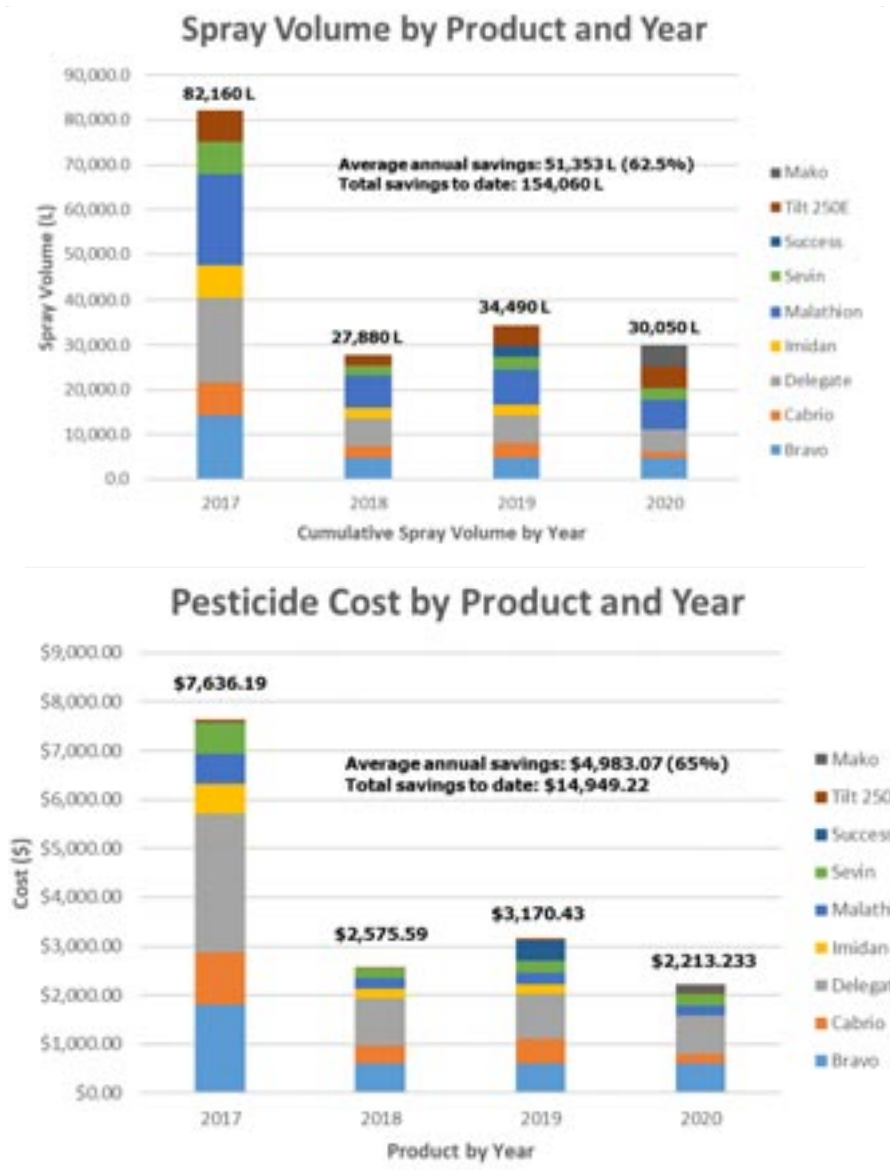
This case study took place on a 15-acre highbush blueberry operation in southern Ontario. In 2016, considerable pressure from spotted-wing drosophila (SWD) prompted the growers to make changes to their crop management practices and their spray program. They employed a three-pronged approach to improving crop protection:

1. Significant changes to canopy management and picking/culling practices
2. Investing in a new sprayer
3. Adopting the Crop-Adapted Spraying (CAS) method of dose expression

Over a three-year period, we tracked pesticide use, water use and yield compared to historic values. We also monitored spotted-wing drosophila catches both in crop and in wild hosts along the border of the operation.

Heavy pruning in 2016

Bushes were pruned ~30% annually to maintain an ideal size and shape.



Canopy management

In 2016 the operation made the following changes to its canopy management practices:

- They performed a heavy one-time pruning and then maintained an ideal crop density by removing ~30% plant material annually.
- They regularly collected and buried culled and dropped berries.
- They picked cleanly and more frequently.

There were initial concerns that such dramatic pruning would reduce production per acre and require trellising to prevent berries weighing down the smaller bushes. However, in 2017 (and thereafter) they found that the quality of the berries was greatly improved and noted fewer hours spent culling berries during packing. Financially, the growers felt they came out ahead.

Application technology

In 2018 they replaced their old, inefficient Kinkelder sprayer with a low-profile axial with conventional hydraulic nozzles to permit greater control of the spray. The Kinkelder design was intended for standard fruit trees. It produced >100 mph air and an extremely fine spray quality and was therefore a bad fit with the planting architecture and canopy morphology of highbush blueberry.

They considered a cannon-style sprayer hoping to spray multiple rows in a single pass but given the desire for improved coverage and reduced waste, they elected to drive every row using a low-profile axial.

The new sprayer was more reliable, quieter, and more fuel efficient. Further, the old sprayer leaked and the air-shear nozzles did not respond when shut down at the end of rows. Eliminating these sources of waste represented a savings of ~20% of the spray volume traditionally used per acre.

Crop-adapted spraying (CAS)

The redundancy inherent to product label rates for three-dimensional perennial crops has long been recognized. In response, rate adjustment (or dose expression) methods have been developed to improve the fit between rate and canopy coverage (e.g. Tree-Row Volume, PACE+, DOSAVIÑA). Each has value, but their adoption has been slow because they are region- or crop-specific and they can sometimes be quite complicated.

CAS lends structure and repeatability to the informal rate adjustment methods already used to spray three-dimensional perennial crops (e.g. Making pro rata changes by engaging/disengaging nozzles in response to canopy height or altering travel speed in response to canopy density).

The CAS method relies on the use of water-sensitive paper to confirm a minimal coverage threshold of 85 deposits per cm2 as well as 10-15 per cent area covered throughout a minimum of 80 per cent of the canopy. Using this protocol, we calibrated air energy and direction, travel speed and liquid flow distribution. This process is covered in detail in the new edition of Airblast101. In that first year, we reassessed coverage every few weeks between April and June using water-sensitive paper.

Spray volume / pesticide

By matching the sprayer calibration to a well-managed canopy, the growers were able to go from ~1,000 L/ha to ~400 L/ha of spray mix. The ratio of formulated product-to-carrier remained the same, but less spray was warranted per acre. Stated differently, the grower mixed the spray tanks per usual, but drove further on a tank.

This also saved an estimated 15 hours of filling/spraying time per year, which translates to reduced operator fatigue and exposure as well as reduced manhours and equipment hours.

The decision of what and when to apply was at the growers' discretion. Chemistry was rotated and applications were made according to Integrated Pest Management in early morning (if there were no active pollinators) to avoid potential drift due to thermal inversions.

Spotted Wing Drosophila (SWD) monitoring

SWD represents a serious economic threat to blueberry operations. Traps were placed in the operation (three in the crop and one in an unmanaged wild host along a treeline) and monitored weekly. Traps were also placed in surrounding horticultural operations which were employing standard pest control practices. This not only provided regional information about SWD activity but allowed us to compare the level of SWD control from the Crop-Adapted Spraying approach.

- In 2018 the comparison included up to 16 other sites that were berry and tender fruit.
- In 2019 the comparison included 10-12 sites (depending on the week) and they were berry and tender fruit sites.
- In 2020 the comparison included 4 other sites (blueberries, raspberries and cherries).

Quantitative results

Prior to replacing their sprayer, and adopting CAS, the operators sprayed about 82,000 L/yr. Their average savings in spray volume was ~51,000 L/yr, or 62.5%.

In terms of pesticide savings, in 2016 annual costs were approximately $7,600 CAD/yr. Their average savings represents about $5,000 CAD/yr or 65% At this rate, we calculate that the ROI for the new sprayer was less than four years.

Yield is more difficult to interpret due to mitigating circumstances in 2019 and 2020:

- In 2016, prior to any changes, they harvested 12,076 flats (about 9lb of fruit each).
- In 2017, following the canopy management changes, harvest increased to 18,335 flats (~50% increase).
- In 2018, using CAS, harvest was essentially unchanged compared to 2017, which was excellent.
- In 2019, harvest started a month late compared to previous years. Further, blueberry prices were low, and the operation elected to stop harvesting a month early. However, when those issues are factored in, the harvest was comparable.
- 2020 was particularly challenging for agriculture and with the possibility of reduced labour due to the pandemic, the operation elected to prune heavily and reduce their yield.

Trap counts for SWD were only performed during the CAS study, so we are unable to compare counts to years pre-study. It should also be noted that while the presence of SWD in an operation represents an impact on yield, there is not necessarily a correlation between the number of SWD captured and the amount of damage.

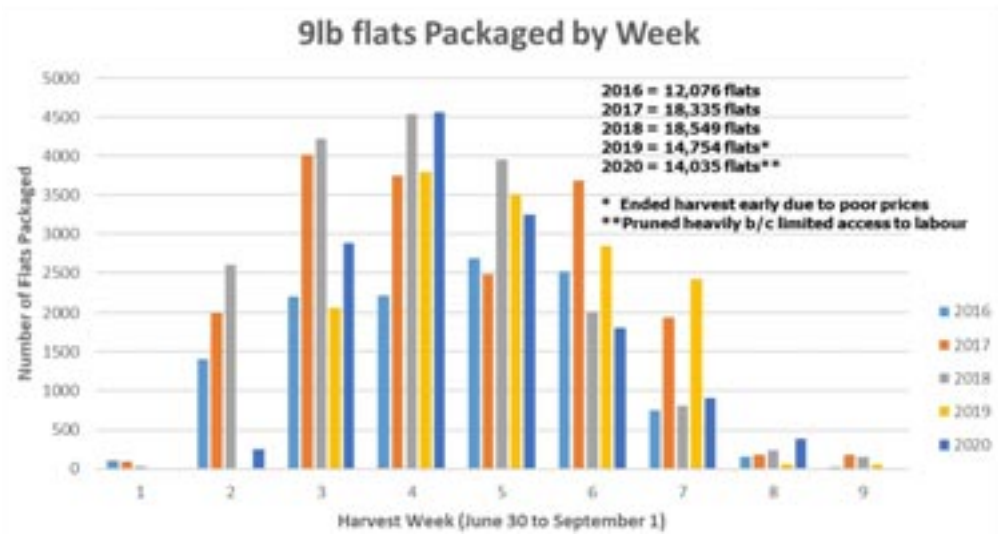
In 2018 and 2020, average counts were higher in the surrounding operations employing standard practices (STD) compared to the CAS trial. In 2019, average counts were higher in the CAS trial. When total average counts are compared, the difference is approximately zero. Berries were tested regularly by the growers and the damage due to SWD was within acceptable limits. It should also be noted growers monitored and reported satisfactory disease control throughout the study.

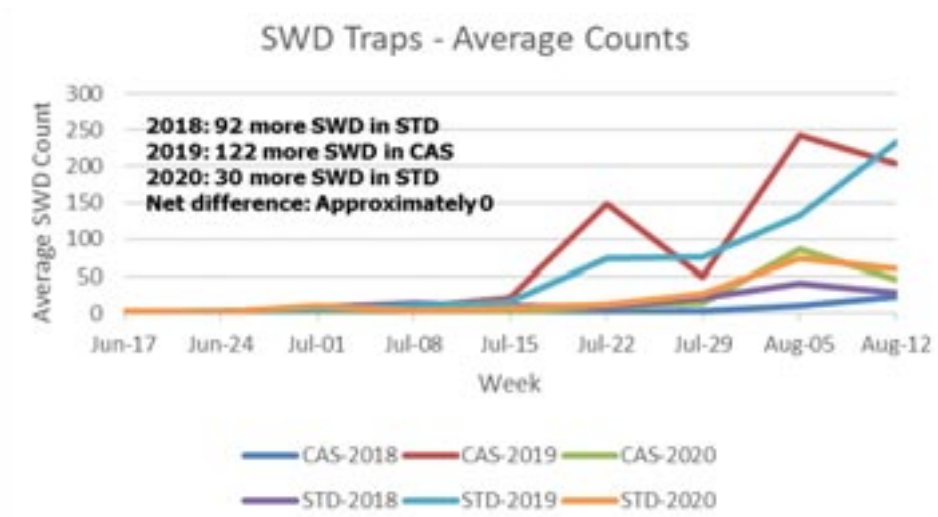
We have not applied any statistical rigour, but the trend suggests that the level of control provided by the CAS method was comparable to conventional methods.

Continued on next page

BERRY NEWS

Crop-adapted spraying - A three-year study in highbush blueberry





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This conforms with our previous results in Ontario apple orchards and similar evaluations of optimized application methods world wide.

Qualitative results

Beyond the quantifiable results, the growers reported qualitative benefits:

- Customers of the U-pick portion of the operation regularly enquire about pesticides. The operation's reduction in pesticide use became a positive speaking point and aligned with the grower's philosophy about reduced environmental pesticide loads.
- While many blueberry growers experienced a market shortage of certain fungicides in 2018, this operation returned unused product to the distributor.
- Growers reported less early-season disease damage, which saved considerable time on the packing line because there was less fruit to cull. Disease levels rose to typical levels later in the season, but there was still a net savings in labour.

Conclusion

The success enjoyed in this berry operation was a result of several canopy management and crop protection changes. This is a situation where the whole equaled more than the sum of its parts – it could only be achieved by making holistic changes to the operation. At the end of three years the growers themselves stated:

"Based on my experience losing multiple crops to SWD, I can say with absolute certainty it works. <The results are> superior to what I expected. What we are doing is successful."

The monitoring portion of this project was funded by Niagara Peninsula Fruit and Vegetable Growers' Association, Ontario Grape and Wine Research and Ontario Tender Fruit Growers in collaboration with private consultants.

Dr. Jason Deveau is application technology specialist for OMAFRA; Erica Pate is fruit crop specialist for OMAFRA.

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BITS AND BITES

What's new for the 2021 Census of Agriculture

In May 2021, Canadian farm operators will receive a letter with instructions on how to complete the census questionnaire online quickly and easily.

The online questionnaire will automatically add totals and will only ask the questions that apply specifically to the operator's farm. This will reduce Statistics Canada's need to call farm operators to clarify their answers.

Lastly, high-quality alternative sources of data will be used wherever possible to reduce response burden.

Farm organizations are heavy users of census data and draw on this information to formulate policy recommendations, produce communications and outreach activities, and conduct market research.

After every census, Statistics Canada consults with farm operators, agricultural industry members and data users to assess their data needs.

In accordance with the Statistics Act, farm operators are required to participate in the Census of Agriculture.

By the same law, Statistics Canada is required to protect the information provided in Census of Agriculture questionnaires. Privacy is a fundamental component of the census.

The first release of data will take place on May 11, 2022—all farm and farm operator variables for the 2021 Census of Agriculture.

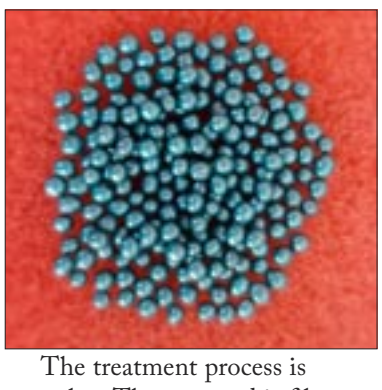
Source: Statistics Canada

Seed quiz 2021 answers

Stumped or stoked? Here are the correct answers from the quiz, page 12 with some interesting background and trivia from Bridget Visser, territory manager for Ontario/Manitoba, Stokes Seeds.

Photo 1 - Beets – Beets are grown globally, but the seed crops are grown for climatic zones. The visible beet seed is actually a rough-looking cluster which contains up to three seeds. In the seed world, specialists look for the sprout count so that they can determine the correct planting densities. In other words, the seed supplier grows out a set amount of seeds and counts the number of plants. The sprout count can differ by variety and lot.

Photo 2 - Broccoli – These blue-coloured broccoli seeds indicate to the grower that they have been dusted with miniscule particles of insecticide or fungicide. The clay-type material helps make the seeds the same size for easier flow in an air seeder. These seeds must be put into seed trays, and then grown into a proper size for transplanting.



The treatment process is complex. The raw seed is film-coated with insecticide or fungicide. Then the seed is encrusted to smooth out the edges. Then it's pelleted into a ball before being colour-coded for seeding.

Photo 3 - Carrots – Any gardener knows that a carrot seed is very small. One seed, one carrot. But as Visser explains, the planting densities vary according to the variety and end use of the seed: baby carrots, slicers, cello, jumbo and dicers. On the trivia side, the COVID-19 pandemic really impacted the jumbo carrot market because suddenly there was little to no restaurant or institutional trade. Some growers gambled by planting cellos for the retail trade. Consumer tip: never store carrots with their tops on – they suck moisture out of the root.

Photo 4 - Parsnips – There is a very stable consumer market for parsnips. Over the years, breeders have developed a foot-long, tapered parsnip root that eases harvest and packaging.

Photo 5 - Sweet corn – One seed, one plant, one cob. There are now sugar-enhanced, synergistic and super-sweet varieties. White sweet corn is a specialty in the New Jersey market, but it's still the same great taste.

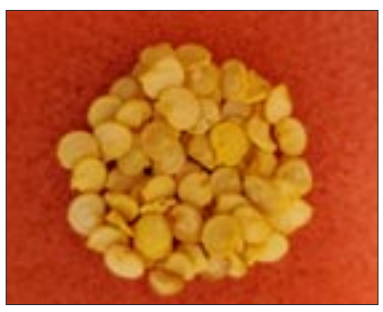


Photo 6 - Peppers – Field peppers, and especially hot peppers, have taken off in the marketplace. Visser calls this "the Chipotle effect." Mexican food has popularized increased use of peppers in cooking.

Photo 7 - Pumpkins – This is a category that has exploded with jack-o-lanterns, squashes and gourds. White pumpkins are prone to sunburn, so they must be harvested before they turn a tawny colour. Hallowe-en has been up-marketed, so the more warty and ghoulish your pumpkin, the better. Baby-blue pumpkins? Yes, says the consumer driving the Lexus to your farm market.

Photo 8 -Tomato –Taste is big in tomatoes. And there's more consumer interest these days in yellow tomatoes. But tomatoes only flourish in limited areas in Canada where there's enough heat.

Photos by Bridget Visser, Barrie, Ontario.

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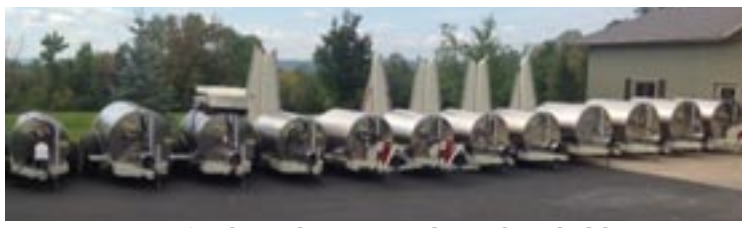

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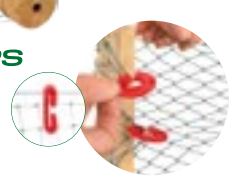

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AUCTION

ADAMA selects Cohort Wholesale to represent horticultural products

ADAMA Canada has partnered with Cohort Wholesale to provide enhanced support for ADAMA's fruit and vegetable crop protection portfolio. The agreement will combine ADAMA's existing and pipeline portfolio of leading fruit and vegetable crop protection products with Cohort Wholesale's technical sales expertise to ensure growers are selecting the best product to address their crop production challenges and optimizing the performance of those products.

"We believe our national partnership with Cohort Wholesale will ensure our fruit and vegetable customers receive the expertise and support they need to incorporate our growing portfolio into their management programs." expressed Tony Zatylny, ADAMA's product portfolio manager.

Cohort Wholesale will provide national support for the ADAMA products used exclusively in outdoor fruit and vegetable production: CORMORAN insecticide, FOLPAN 80 WDG fungicide and NIMITZ 480 EC nematicide.

ADAMA Canada continues to focus on expanding its portfolio of row crop and potato products, including ARMORY 240, ARROW 240 EC, LEOPARD and SQUADRON I herbicides, ALIAS 240 SC and SILENCER 120 EC insecticides as well as BUMPER 432 EC fungicide.

Source: ADAMA/Cohort Wholesale November 30, 2020 news release

CROP PROTECTION

Québec strawberry growers are facing new challenges in crop protection

LUC BÉRUBÉ

Things have changed rapidly in growing strawberries in the past few years in Québec. Like every other Canadian grower, Québec growers saw numerous crop protection products not renewed, limiting the list of common pest control products in their arsenal. Combined with the launch of a new generation of environmentally-friendly pest control products and the Québec government's commitment to decrease total risk of pest control applied, Québec strawberry growers are facing new challenges. Let's see how they learn about those new pest products.

The limiting use or the non-renewal of some fungicide pesticides, such as Iprodione, Captane, Quinoxyfene in strawberries opens the way to new fungicides oriented on a more environment-friendly or organic approach. This also makes fungicide group rotation more complex. Often, these products work on suppressing or limiting the fungus development as opposed to controlling it, as "old" fungicides would do. We saw products containing Trichoderma, various Bacillus, Streptomyces, polypeptides and sometimes minerals getting into the fungicide arsenal of the growers. These new products fit into the strategy to decrease the total risk of pesticides applied in crop protection. They often have the lowest risk index in terms of environmental and health (we will be return to this subject on evaluating pesticides risk in Québec in an upcoming column), but growers raise questions about efficiency and cost.

To address growers' concerns, three demo sites have been deployed in three different areas. Those sites have been coordinated by Le Carrefour Industriel et Expérimental de Lanaudière (CIEL) under the leadership of Pierre Lafontaine and his team, funded by the provincial government. The project started three years ago and is continuing for another three years. Each site is conducted on a commercial strawberry operation in collaboration with the agronomic consultant working with each grower. The objective of the demo sites is to test and promote, at the field scale (not plots), new strategies on crop protection. Testing and using new fungicides with lower risks is a part of the activities held with each grower participant.

The idea behind the demo sites is to compare the grower's fungicide strategy to a lower-risk strategy. On each site, the grower needed to approve the proposed strategy. In the particular case of strawberries, gray mold and powdery mildew are the two critical diseases to manage. Distinct strategies are used between each site (region) and on each site. They are adapted continuously depending on weather, crop development and health. Continuous scouting of disease is performed on each site to ensure proper control in the alternative strategies and that of the grower.

On all sites, a strategy has been built around the introduction of new fungicides showing lower risks index. At the beginning of each season a fungicide program has been built and applied for testing. Depending on disease pressure, the fungicide program is adapted all season long, depending on the weather conditions and grower's confidence level with the proposed alternative strategy.

"What we learned from the project after three seasons is really interesting," says Pierre Lafontaine from CIEL. "Results are very encouraging and disease control on every site has been good."

The strategy applied at the beginning was applying "usual" fungicides used by the grower and comparing with lower-risk fungicides during the growing season. As the season progressed and depending on the grower's confidence, adjustments were made. The first idea was not necessarily lowering the amount of pesticide used but, having an impact on the risks. At the end of the first three years, the risk index of the pesticides applied in the participants' strawberry fields has been reduced by 30 to 66 per cent.

'It's a big step! Especially without losing control of diseases," confirms Pierre Lafontaine. It is important to note that every grower saw his risk index decrease.

Each farm received other growers during these seasons for a field day. Strategies applied on each farm were presented and discussed with growers and crop consultants. The objective was not identifying the best fungicide strategy, but helping growers to achieve very good crop protection, with a lower-risk index at an economical level and compare the efficiency of new products when included in a global crop protection strategy.

Finally, this research project shows growers how to face a changing environment. They can adapt to various situations, especially when they are well surrounded and supported. We need leadership and curiosity to get to the next step in our way to produce quality food while preserving the environment. We will follow the next three years and see how many more growers will tend to reduce their index risk!

Luc Bérubé is a 1997 graduate in agronomy from Laval University, specializing in phytology. Since then, he's been a member of the "Ordre des Agronomes du Québec." Since 1999, Bérubé has worked as a consultant with producers within the Pousse-Vert Group which supports nearly 200 agricultural businesses. Advising 30 companies, he specializes in all aspects of potato and berry production. He is a part of the plant protection mentor team for club advisors across Québec. Additionally, he is a trainer for certification for the application of pesticides.

A mid-season strawberry field testing site was pictured in 2020.

A field day was held on a demonstration site in a day-neutral strawberry field in 2019. Source CIEL.

CROP PROTECTION

Chlorpyrifos use in fruits, vegetables cancelled

The Pest Management Regulatory Agency (PMRA) has re-evaluated the use of chlorpyrifos, an organophosphate insecticide, and cancelled its use in fruits, vegetables, cereals, legumes and oilseeds. Food uses will be removed from most labels of chlorpyrifos products by December 10, 2022 with remaining products for food use cancelled by December 2023. Last use dates for garlic and canola have been extended to December 10, 2024.

Currently, there is no alternative control available for darksided and redbacked cutworm in garlic. Interim mitigation measures for garlic include reducing applications to one per season at the lower label rate of 576 g active ingredient/hectare. And buffer zones must be present to protect sensitive aquatic biota.

The PMRA has ruled that the only acceptable uses of chlorpyrifos are for:

• Outdoor ornamentals for container stock for control of Japanese beetles
• Mosquito control in standing water
• Structural use in non-residential areas
• Tree trunk application for forestry uses

PMRA's decision can be found here: https://bit.ly/3gywmi8

Source: Pest Management Regulatory Agency December 10, 2020 re-evaluation decision

Lalstop G64 WG biological fungicide label expanded to manage diseases in greenhouse-grown crops

JIM CHAPUT

The Pest Management Regulatory Agency (PMRA) recently announced the approval of a minor use label expansion registration for Lalstop G64 WG biological fungicide (previously known as Prestop WG) for suppression of soil-borne and foliar diseases on greenhouse-grown eggplant, Asian water spinach, strawberries and indoor-grown cannabis in Canada. Lalstop G64 WG biological fungicide was already labeled for use on several greenhouse-grown vegetables, herbs and ornamentals in Canada for management of these diseases.

These minor use projects were submitted by Ontario as a result of minor use priorities established by growers and extension personnel.

The following is provided as an abbreviated, general outline only. Users should be making pest management decisions within a robust integrated pest management program and should consult the complete label before using Lalstop G64 WG biological fungicide.

Do not apply or allow drift of Lalstop G64 WG biological fungicide to other crops or non-target areas. Do not contaminate off-target areas or aquatic habitats when spraying or when cleaning and rinsing spray equipment or containers.

Follow all other precautions, restrictions and directions for use on the Lalstop G64 WG biological fungicide label carefully.

For a copy of the new minor use label contact your local crop specialist, regional supply outlet or visit the PMRA label site.

Jim Chaput is minor use coordinator, OMAFRA.

Crop(s)	Target	Rate	Application Information
GH eggplant, GH Asian water spinach, GH Strawberries, Indoor-grown cannabis	Suppression of damping-off (Pythium spp. and Rhizoctonia solani) and crown and root rot (Pythium spp.)	Growing Media or Drench Application: Prepare an aqueous suspension of LALSTOP to 0.05% (see label instructions)	Treat the growing media prior to seeding, transplanting or potting, or else make a drench application immediately after seeding, transplanting or potting. Once seeds are sown or seedlings transplanted, additional applications can be made as a drench or foliar application. Always use an aqueous suspension of the product. Repeat applications every 3 to 6 weeks. Can also be used in hydroponic systems.
	Suppression of Botrytis stem canker and gray mold	Foliar Spray: Prepare an aqueous suspension of LALSTOP to 0.05% (see label instructions)	Apply preventatively the 0.05% aqueous suspension of LALSTOP to plant stems and leaves. Spray to wet but not to run-off. Repeat every 3 to 4 weeks. Can also be used in hydroponic systems.

New book on air-assisted spraying

DR. JASON DEVEAU

"Airblast101 – Your Guide to Effective and Efficient Spraying, 2nd edition" is now freely available as an ePub, or at cost via print-on-demand publishing, via www.sprayers101.com/airblast101

Airblast101 began in 2010 as a classroom-based workshop for Ontario's airblast sprayer operators. It was intended as a primer and decision-support tool for operators to become safer, more effective and more efficient.

After several iterations, the first text-book edition was made available in 2015. It won the 2016 Canadian Agri-Marketing Association's "Certificate of Merit" in the Special Publications Category. Well over a thousand copies have been circulated worldwide but it was never really intended for an international audience.

In late 2019, working with U.S. sprayer specialist Mark Ledebuhr (Application Insight LLC) and NZ sprayer specialist Dr. David Manktelow (Applied Research and Technologies Ltd.) we began developing more advanced and globally-relevant content.

The familiar "Airblast 101" title is, perhaps, no longer accurate. The original emphasis was on the classic, low-profile radial design developed in the 1940s when it was recognized that pushing spray with air gave better coverage with less water. These sprayers continue to dominate in specialty crops around the world because they are simple, economical, and can operate effectively across a wide range of canopy forms and planting geometries.

But, air-assist sprayer design has evolved and diversified. With this new edition we've broadened the scope to include all air-assist sprayers. We hope to introduce you to equipment and practices you may never have personally encountered. We will also give you the tools to assess their relevance to your operation. This required a deeper dive into the physics of spraying, but we've kept the tone conversational and relied heavily on illustration to make concepts accessible.

The new edition continues to focus on three central themes:
• Understanding the forces that influence air and spray droplet behaviour.
• How to configure a sprayer to optimize coverage and minimize waste.
• How to evaluate spray coverage.

So, perhaps you're new to air-assist spraying and deciding which sprayer is right for your operation. Perhaps you're an experienced operator re-evaluating your practices. Maybe you're a farm manager, a government pesticide regulator, an agricultural extension specialist, an equipment manufacturer, a consultant, an agrichemical sales representative or a researcher. No matter your perspective, if you're interested in air-assisted spraying, the new edition will have something for you.

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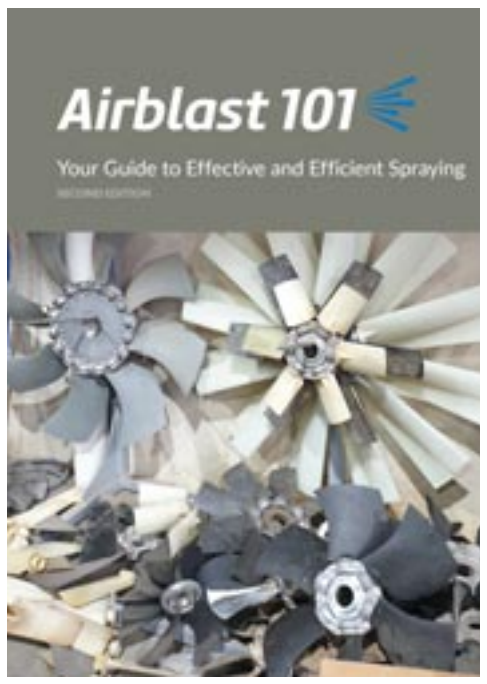

• Appendix 2: Rate controllers
• Appendix 3: Product rate calculations
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Dr. Jason Deveau (@spray_guy) is the application technology specialist, OMAFRA.