

AUTOMATION

On top of the latest labour-saving equipment



Spurred by increasing input costs, growers are investing heavily in new planting and harvesting equipment to save labour and gain efficiencies. Carrot, parsnip and onion grower Doug Van Luyk is one of those in the Holland Marsh who has expanded to 500 acres in both muck and mineral soils with the help of technology. Here, his son Bradley stands on top of a self-propelled, two-row carrot harvester near Newmarket, Ontario. Photos by Glenn Lowson.

KAREN DAVIDSON

Big iron is common to muck crop growers. What's new is that self-propelled harvesters are now designed to gather up two rows of carrots, doubling the usual one row. Rather than harvest 20 to 25 tons per hour, the machine can harvest 40 to 45 tons per hour.

More than that, these lumbering machines are equipped with a bristle belt made of thousands of rubber fingers that scrub dirt off the carrots before they tumble onto a conveyor belt. That's why Doug Van Luyk has invested in a Vogel Engineering Extreme Cleaning Carrot Harvester. The ability to keep soil in the field has become an important

consideration when selling to nearby packers. In the value chain, they are responsible for cleaning carrots for ultimate sale – a costly process that requires de-dirting equipment and water cleaning.

"I've been making carrot harvesters for 37 years," says Wayne Vogel, Holton, Michigan. "The unique aspect of this machine is that the carrots fall from the topping bar and spend a few seconds on the bristle belt while fans blow air over them."

All vegetable growers in the Holland Marsh and other muck-growing areas became more sensitized to issues of soil and water when provincial environmental regulations tightened around water discharge from cleaning facilities. A 2016

engineering report called "Soil Removal and Turbidity Monitoring for Carrot Washing" was one such wake-up call. Going forward, what growers had to factor into their operations is that delivering cleaner carrots to their customers was table stakes for staying in the game.

"There's a demand for quality carrots," says Van Luyk. "With this harvester, we've been able to expand our carrot acreage by 30 per cent in the last two years to 350 acres. We're also growing more carrots on mineral soils in a three-year rotation."

Vegetable growers on mineral soils are also investing in equipment. Exeter Produce located in southwestern Ontario is one example, farming more than 4,000

acres of beans, cabbage, rutabaga, field peppers and rotational crops of corn, soybeans and wheat.

This is the second season for employing a two-robot, four-row Ferrari Futura transplanter for cabbage says crop specialist John Beardsley. The robots pick the plugs out of the trays.

"There were a lot of challenges the first year," says Beardsley. "It was a learning curve for our propagator because the plants have to be as upright as possible. We want no intermingling of the leaves between plugs. Because we were behind in getting to the field, the plants grew larger in the greenhouse than we wanted."

Continued on page 3

AT PRESS TIME...

First-ever food policy for Canada

Canada's first national food policy will be supported by \$134 million designated in the 2019 budget towards a singular vision: All people in Canada are able to access a sufficient amount of safe, nutritious and culturally diverse food. Canada's food system is resilient and innovative, sustains our environment, and supports our economy.

Hon. Marie-Claude Bibeau, minister of agriculture and agri-food, announced the details after input from 45,000 Canadians, including food producers and processors, experts in environment, health and food security, Indigenous groups, non-government organizations, and community advocates.

"Food is affected from a variety of factors that are rarely in the spotlight," said Mary Robinson, president, Canadian Federation of Agriculture. "International and domestic regulatory processes, immigration policies, transportation, climate change, education, consumer habits and cutting edge technology all have direct effects not only on the ways that we produce food in Canada, but also the price of food and the types of food that we have available to eat. A National Food Policy can organize this puzzle and help fit the pieces together."

Not every organization is as supportive of the policy. Food Secure Canada issued a news release that targeted current food



production practices.

"Today's policy announcement and its associated budget does not yet have the scale required to bring four million Canadians out of food insecurity, or to address the role of the current industrial food system in diet-related disease and the climate crisis - nor does the announcement recognize or work to strengthen food sovereignty, particularly with respect to Indigenous Peoples - but it is a place to start," said Gisèle Yasmeeen, executive director, Food Secure Canada.

Central to the vision is a newly created Canadian Food Policy Advisory Council. Letters of nomination will begin over the summer.

Also announced is the launch of a five-year, \$50 million Local Food Infrastructure Fund, designed to support community-led projects that improve access to safe, healthy and culturally diverse food. Starting August 15, 2019, eligible organizations will be invited to submit an application through the first intake period for non-repayable funding of up to \$25,000.

Minister Bibeau also highlighted other Food Policy of

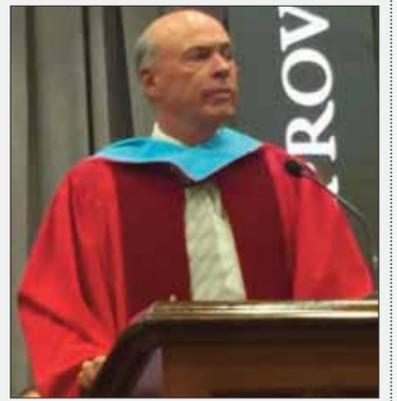
Canada initiatives, including:

- a new Canada Brand and Buy Canadian promotional campaigns that will aim to increase pride and consumer confidence in Canadian food;
- support for community-led projects such as greenhouses, community freezers, and skills training that address food challenges and food insecurity in Northern and isolated communities;
- a challenge fund to support the most innovative food waste reduction ideas in food processing, grocery retail, and food service;
- new funds to help the Canadian Food Inspection Agency crack down on food fraud – the mislabeling and misrepresentation of food products – to protect consumers from deception and companies from unfair competition; and
- to take the first steps to work alongside provinces and not-for-profit organizations towards the creation of a National School Food Program.

Source: AAFC June 17, 2019 news release/Food Secure Canada June 17, 2019 news release

NEWSMAKERS

On June 13 the University of Guelph conferred an honorary degree on broccoli grower **Ken Forth**, Lynden, Ontario. As a longtime advocate for the Seasonal Agricultural Worker Program, Forth has had a profound impact on the Canadian fruit and vegetable industry, as well as thousands of families across Mexico and the Caribbean. Through leadership positions in numerous industry associations, including Foreign Agricultural Resource Management Services (FARMS) and the Ontario Fruit and Vegetable Growers' Association, Forth has helped develop labour legislation and regulations and ensured continued access to labour critical to Canada's agricultural industry.



The Ontario Produce Marketing Association has elected its 2019-2020 board of directors which will be led by **Sarah Taylor**, Gambles Produce. Joining her are three newly elected directors: **Rebecca Compton**, Asparagus Farmers of Ontario; **Michael Borsok**, Greenhouse Juice Company; **Shreenivas Shellikein**, Highline Mushrooms. The remainder of the board comprises: vice-chair **Houman Madani**, Metro; **Joe Dutchyn**, Niagara Orchard and Vineyard Corporation; **Steve Bamford**, Fresh Advancements; **Chris Streef**, Streef Produce; **Adam Donikian**, Sobey's Ontario; **Frank Spagnuolo**, Loblaw; **Jason Verkaik**, Carron Farms; **Steve Moffat**, North American Produce Buyers; **Julian Sarraino**, Fresh Taste; **Sarah Marshall**, Ontario Tender Fruit Growers; **Carleigh White**, Walmart Canada; **Steve Dimen**, Ippolito Fruit & Produce; **Todd Patterson**, Organic Girl. The OPMA's next social activity is slated for September 18: Golf Tournament at Lionhead Golf and Country Club, Brampton, Ontario.

Agri-food leader **Crystal Mackay** has announced a new communications venture, Loft32, based in Guelph, Ontario. She is well-known in farming and food circles for her work as the inaugural CEO of Farm & Food Care Canada/Ontario, and more recently the Canadian Centre for Food Integrity. She is joined by **Maggie Van Camp**, journalist and business leader. The company will provide services in strategic communications (speaking, training, facilitating), project management and support, agriculture and food expertise.

Winnipeg-based Peak of the Market has announced that **David Busby** is joining the team as director, business development. For the last 11 years, he has worked with Richardson International, including assistant vice-president of sales for Richardson Oilseed. His extensive sales and customer service experience also includes 16 years with Alfresh Beverages (Fairlee Fruit Juice) where he rose to the role of vice president of sales. Busby will oversee the Peak of the Market's sales and transportation team.

Darren Dillenbeck, country manager for FMC Canada, officially opened the national headquarters on May 30 in Mississauga, Ontario. "We're a crop protection company, not a seed company," he said, noting the benefits of no distractions. The company has undergone a major transformation when it acquired DuPont's crop protection portfolio in late 2017. It is now considered the fifth largest provider of crop protection materials in Canada.

Chris Davison, former head of corporate and government affairs for Syngenta Canada, Guelph, Ontario, has moved to Washington, DC to take up a new role. Effective June 1, he became head, business sustainability for Syngenta North America.

Condolences to the family of **Peter Martin Lindley**, 85, alias Pickin Pete, who passed on June 11. The fifth-generation fruit and vegetable grower served on numerous government committees and boards throughout his farming career including: president, Burlington Skyway Growers; president, Ontario Institute of Agrologists, Hamilton Branch; Ontario Pesticide Advisory Committee; president, Ontario Fruit and Vegetable Growers' Association in 1978; inductee to Ontario Agricultural Hall of Fame 2015. The home farm in Ancaster continues with son **Joe Lindley**.














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COVER STORY

On top of the latest labour-saving equipment



Ferrari Futura fully automated transplanter. Photo supplied.



Vogel Engineering Extreme Cleaning Carrot Harvester at Van Luyk's farm.



Ferrari Remowed at Exeter Produce, 2018. Photo supplied.



16-row mechanical weed remover for a pumpkin grower. Photo supplied.

Continued from page 1

Those challenges have been met and the 2019 planting has been smoother with 200 acres of cabbage. Rather than 14 to 16 seasonal workers engaged in transplanting, the new machine requires only three workers. The pace allows for seven acres of cabbage to be planted in a day. Given the wet spring, another advantage is the ability to plant quickly during brief weather windows of

opportunity.

The next investment in labour-saving equipment has been a Remowed. Instead of hand hoeing weeds out of cabbage fields, this machine allows for mechanical weed control.

"We had to make adjustments on the fly," says Beardsley. "The European equipment is calibrated in metric so we had to convert from inches to centimetres. Once we trained our workers how to make those changes, life

was good."

Both of these pieces of equipment were sourced from Albert van Oosten, Specialty Vegetable Equipment, Princeton, Ontario. He's responsible for being in the field and making sure that equipment sales live up to their potential.

"We deal with start-up issues and nervous farmers, but this is the future, no matter what," says van Oosten.

What's the next big thing?

Fumigants are being legislated out of use, so watch for equipment that steams soils for weed control.

The Grower goes "Behind the Scenes" of this cover story to speak with John Beardsley, crop specialist for Exeter Produce, Exeter, Ontario. He shares the challenges and benefits of transitioning to labour-saving equipment. To listen, visit www.thegrower.org/podcasts.



AT PRESS TIME . . .

Changes announced to program delivery for Canadian Agricultural Partnership

The Agricultural Adaptation Council (AAC) -- the Ontario association contracted to award and distribute federal-provincial funding from the Canadian Agricultural Partnership (CAP) -- is no longer in that role. On June 12, the Ontario agriculture ministry announced that its own officials will be taking over those duties, effective November 29,

2019.

OMAFRA assistant deputy minister Randy Jackiw informed stakeholders that a new program called Place to Grow: Agri-Food Innovation Initiative within CAP would be more effective in advancing the sector. A new category to address labour supply and training challenges will be added. The first intake will begin on August 25, 2019 and remain open until September 27, 2019. The second intake will open January 6, 2020.

"To say this is a shock is an understatement," wrote Kelly Duff, chair of the AAC board to

stakeholders. "AAC is extremely disappointed by this OMAFRA decision, which disrupts a long-running, productive and beneficial relationship that the AAC has had with the provincial government.

"We believe in a funding model where decisions are made by the industry for the industry and there is no doubt that the decision to abandon this successful approach is a blow to the Ontario agriculture and agri-food industry."

There are 67 organizations which elected 16 industry members to the board of

directors. Grape grower Ray Duc and vegetable/garlic grower Mark Wales sit on that board representing horticulture. Many horticultural groups have benefited from research and marketing projects in the past.

Executive director Terry Thompson confirmed that the board reviewed the latest intake of applications on May 14 and 15. The outcome of those deliberations were expected no later than June 7. At press time, Thompson said, "We are not in a position to communicate any results."

Tens of thousands of dollars earmarked for summer research

and critical consumer marketing efforts are now in limbo. At press time, no applicants had received information in writing to confirm the status of their project application. However, some OFVGA members have been notified verbally by the minister's office. Some applicants have been successful, others not.

Since its inception, AAC has committed approximately \$300 million in support of more than 3,800 projects for the Ontario agriculture and agri-food industry.

CROSS COUNTRY DIGEST

BRITISH COLUMBIA

International blueberry industry meets in Richmond

British Columbia growers hosted the International Blueberry Organization June 24-26, 2019 in Richmond, an opportunity to showcase expertise and exports. Canada produces the third largest volume of highbush blueberries in the world after the U.S. and Chile.

“The IBO summit brings the global blueberry industry together under one roof to address challenges and explore opportunities moving forward,” said Anju Gill, executive director of the BC Blueberry Council.

The international delegation experienced first-hand the natural beauty of British Columbia, the largest highbush blueberry-

growing region in Canada. The program included industry specialists, and ‘on-the-ground’ panelists, including fruit quality experts, breeders, retailers and exporters from around the world. A tour was organized for Save-On Foods and Valley Select Farms.

The program educated attendees on the latest developments and future trends in production, marketing, logistics, equipment, trade and market access, substrate production, breeding and genetics, and retail.

Here are some of the topics presented:

- Fruit quality and flavour: it starts with you by Peter Toivonen and Charles Forney
- Advanced technologies for an



innovative blueberry industry by Rod Cork

- Accessing global markets in an increasingly regulated climate by Bill Bryant and David Smith
- Substrate production: the way of the future? By Bart Verheijen

“British Columbia leads in packing and processing technology advancement and grows some of the best quality blueberries for the global

markets,” said Abbotsford-based Parm Bains, chair of the IBO Organizing Committee. “Along with some of the most ideal growing conditions and high food safety standards, B.C. blueberries are known for their quality, putting our berries in high demand from customers around the world.”

Organizers say this year’s IBO Summit was the biggest yet with more than 400

registered for the three-day event.

The IBO Summit is held in a different blueberry-producing country every 18 months, highlighting the interconnectedness of the global blueberry industry as both demand and production continue to grow at astonishing rates.

ALBERTA

Strong demand for irrigated land in southern Alberta

Farm Credit Canada issued its 2019 farmland value report with few surprises. Dig into the regional reports, and a clearer picture emerges of wide ranges.

Alberta, for example, has recorded advances of 7.4 per cent on average in 2018, following a 7.3 per cent increase in 2017. According to FCC senior economist, J.P. Gervais, several factors explain variations across the province:

- There was strong demand for farmland throughout southern Alberta, mostly for irrigated land suited for potato production.
- The oil and gas industry showed some signs of recovery at the beginning of 2018, heightening demand for land temporarily, which then softened.
- Smoke from B.C. wildfires throughout much of the



Alberta farmland regions

Region	% change	Value \$/acre*	Value range**
1 Peace	4.0%	\$2,119	\$1,000 – \$3,200
2 Northern	6.1%	\$3,371	\$1,600 – \$6,500
3 Central	5.9%	\$4,109	\$1,400 – \$8,500
4 Southern	12.7%	\$6,157	\$1,900 – \$14,100

*FCC reference value \$/acre.

**The value range represents 90% of the sales in each area and excludes the top and bottom 5%.

summer and significant harvest challenges in the fall reduced

the number of transactions in the Peace region.

SASKATCHEWAN

Sour cherry/haskap breeders honoured

Earlier this year, two University of Saskatchewan fruit breeders stepped into the spotlight, winners of the Stevenson Award for their development of sour cherries and haskaps on the prairies. Here is an abridged history of their research, courtesy of Sara Williams.

The first sour cherries planted in the University of Saskatchewan experimental plots were from seeds from the Central Siberian Botanic Garden in Novosibirsk. These were just beginning to fruit when Rick Sawatzky began work as a technician in 1971. They had low productivity and lacked winter hardiness. Asked to discard them, Rick took two home which he tried (unsuccessfully) to cross with sweet cherries. His goal: to develop a hardy large shrub with large, high quality fruit.

His next crosses involved a

collection of sour cherries, mainly from Europe. He crossed the best of these, ‘Kerr’s Easy Pick’ with ‘North Star’, a sour cherry tree introduced from Minnesota. The result was ‘SK Carmine Jewel’, the first sour cherry introduced by the University of Saskatchewan in 1999.

Bob Bors arrived at the University of Saskatchewan in 1999, tested them further and selected the best, developing a protocol for their tissue culture propagation. He gathered additional cherries from local growers and from Ontario and made more crosses. When making selections he looked at flavour, size, pitting ease and the possibility of mechanical harvesting.

Bors introduced the Romance series of cherries in 2003: ‘Crimson Passion’, ‘Cupid’, ‘Juliet’, ‘Romeo’ and ‘Valentine.’ Rick Sawatzky’s

advice on the care of sour cherries: “Grow them as a shrub with multiple stems rather than in tree form.” Bob Bors adds: “Keep the soil around cherries weed-free.”

The other breeding breakthrough was haskaps, a berry that has gone through many incarnations in terms of names. They’ve been called blue honeysuckle, sweetberry honeysuckle and honeyberries.

Breeding at the University of Saskatchewan began soon after Rick Sawatzky came across what were then called honeyberries (*Lonicera caerulea edulis*) in 1997. Among the early and mid-season haskaps released in 2007 were ‘Borealis’, ‘Tundra’ and the Indigo series (‘Indigo Gem’, ‘Indigo Treat’ and ‘Indigo Yum’). ‘Aurora’ and ‘Honey Bee’ followed in 2011. Later ripening haskap releases were ‘Boreal Beauty’ and ‘Boreal Blizzard’ in 2014 and



Rick Sawatzky and Bob Bors

‘Boreal Beast’ in 2016.

Haskap research has been funded through five Saskatchewan Agriculture grants spanning 13 years. Over the last five years from 2013-2018, 75 per cent of the program funding has come from plant patent royalties derived from their introductions.

Bors says his greatest accomplishment has been the expansion of the haskap program. “We took something that did not exist and brought it forward to the point where the University of Saskatchewan has the world’s best haskap

breeding program. Our haskaps taste better, ripen later and stay on the bush longer before falling off. As well, we were the first to use mechanical harvesters. We have given birth to a whole new industry.”

The annual Haskap School will take place July 18, 2019 at the Agricultural Building, University of Saskatchewan campus. A Haskap Field Day is scheduled for July 19. Source: Abridged version of a feature written by Sara Williams, University of Saskatchewan.

CROSS COUNTRY DIGEST

QUEBEC

Canadian berry consumption is growing, but lags behind the U.S.



Quebec berry growers have compiled a sector report that analyses strengths and weaknesses, revealing that Canadian consumption is now at 4.1 kg (or 9 lb) per capita. That figure is still below growth in the U.S.

which is pegged at 4.6 kg (or 10 lb) per capita.

Here are some of the topline findings:

- Global consumption of

Trend lines in per capita consumption of berries in Canada and U.S. (Kgs)



Sources : Statistique Canada et United States Department of Agriculture (USDA); compilation du ministère de l'Agriculture, des Pêcheries et de l'Alimentation (MAPAQ).

strawberries is rising

- Americans consume more strawberries and raspberries than Canadians

- In Canada, the growth of frozen raspberry consumption is greater than that of strawberries, either fresh, frozen, or canned.

- Strawberries are the most popular berry sold in Quebec's retail market

- For Canada, imports of

raspberries and strawberries are larger than exports

- Mexico is becoming a new major competitor in the production of strawberries and raspberries

- Quebec is the principal province producing strawberries

- Production of strawberries and raspberries is found mainly around Québec City and Montréal.

- Research and innovation in new growing techniques for strawberries and raspberries is allowing for extended growing seasons

- The future will be defined by a reduction in access to pesticides, increased growing costs and the development of new markets

Source: *De l'industrie de la fraise et de la framboise au Québec*

NOVA SCOTIA

A red-fleshed apple? It's possible



Apple Biodiversity Collection based at Kentville, Nova Scotia.



Unique apple variety 'Pink Pearl' has red flesh, a rare trait in apples.

A one-of-a-kind apple study is underway this summer, conducted by scientists at the Agriculture and Agri-Food Canada (AAFC) Research and Development Centre in Kentville, Nova Scotia. Their aim is to help accelerate the rate at which new apple varieties are coming to market.

A research team led by Dr. Jun Song, AAFC's postharvest physiology research scientist, and Dr. Sean Myles, associate professor with Dalhousie University, are picking their way through more than a thousand apple varieties to better understand and improve the quality and marketability of Canadian apples.

"We are peeling away the genetic control mechanisms responsible for the desired and undesired traits in apples and have made discoveries that are accelerating Canadian apple breeding," says Dr. Jun Song.

To date, they have made many discoveries such as an analysis into susceptibility to frost damage. But these scientist are not stopping there. Their to-do-list includes: flowering time, fruit shape and colour, firmness at harvest, soluble solids, firmness loss after storage, aroma volatiles, bioactive compounds-phenolics and flavonoids and antioxidant activity.

All this data, along with other data on apple traits such as sweetness, acidity, firmness, storage ability and their DNA sequence is being compiled and added to the Apple Biodiversity

Collection (ABC) – a collection that contains well-known commercial varieties, heritage varieties, advanced breeding lines, cider apples, and even wild apples from the forests of Central Asia.

This study into apple traits from A to Z is the only one of its kind in the world being done

at this scale.

In the past, it took up to 25 years to develop a new apple variety. Today, gene sequencing is allowing apple breeders to find and select the traits they want much more quickly.

Source: *Text and photos by Agriculture and Agri-Food Canada*

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REDUCING PLASTICS

CPMA Plastic Packaging Working Group meets in July

KAREN DAVIDSON

If re-elected, Prime Minister Justin Trudeau has promised to ban single-use plastics by 2021. The announcement puts added pressure on the Plastic Packaging Working Group which has been constituted by the Canadian Produce Marketing Association (CPMA). It is due to meet again in early July.

The federal government's intent is to establish targets for companies that manufacture or sell plastics to be responsible for their plastic waste. Currently less than 10 per cent of plastic used in Canada is recycled. And that's the rub -- there is no recycling program that currently meets the need.

The Canadian Produce Marketing Association has convened a working group to support food quality and safety while reducing environmental impact of plastics. First steps for the Plastic Packaging Working Group is to identify efforts already undertaken by industry and determine best practices.

The impetus comes from not only media headlines but from a G7 perspective, efforts to address plastics are already underway with the June 2018 commitment to the Ocean Plastics Charter. The charter included commitments to work with industry to achieve significant reduction and

recyclable goals by 2030/40. In Canada, this led to commitments from the Canadian Council of Ministers of the Environment (CCME) to work together to address plastic waste.

Phase one of CPMA's working group will include the required data collection to frame the situation within the produce sector. This research will include consumer perception reviews, landscape review (industry practices, regulatory requirements and efforts around the globe), and industry consultations focused on product design, single-use plastics and collection systems.

In addition, it has been noted in the Canadian Strategy on Zero Plastics that "Achieving the vision of a circular economy for plastics will require that actions be taken in many areas, in some cases to enhance current performance, and in others, to transform and adopt new practices and behaviours." CPMA, with the support of its members and allied partners, hopes to support efforts within the sector to ensure the vision is based on sound science and business best practices that allows the opportunity for the produce industry to identify, prioritize and implement systems-wide changes.

The group will meet again in early July 2019 to review the data and determine objectives moving forward around:



Costco Canada	Markon
Del Monte Fresh Produce N.A., Inc.	Metro Inc
Earth Fresh Foods	Mucci International Marketing Inc.
Federated Co-operatives Limited	Ontario Greenhouse Vegetable Growers (OGVG)
Fresh Advancements/Freshline Foods	OPPY (The Oppenheimer Group)
Global Citrus Group Inc.	Sinclair
Highline Mushrooms	Taylor Farms
Hydoserre Inc. (MIRABEL)	The Ontario Food Terminal
Loblaw Companies Ltd.	The Star Group
Longo Brothers Fruit Markets Inc	Veg Pro International Inc.

- Identifying the challenges and opportunities facing the produce industry, as well as its relative importance in reducing total plastic waste in Canada and globally.
- Investigating new opportunities: innovations which can support the elimination of unnecessary and

- problematic single-use plastics.
- Ensuring plastics within the produce sector are reusable, recyclable or compostable, with a notable attention to the need for increased/improved recycling opportunities.
- Best communicating the trade-offs between ensuring food quality and safety and

minimizing the environmental impacts of plastic packaging (Source: Strategy on Zero Plastic Waste, Canadian Council of Ministers of the Environment – Nov. 2018).
Twenty-three CPMA member companies are participating in the working group.

ENERGY

Electricity upgrade for Windsor-Essex

The Independent Electricity System Operator (IESO) has requested Hydro One to develop and construct a transmission line to meet the increasing electricity needs in the Windsor-Essex region.

"This new transmission line will increase electricity access in Kingsville-Leamington, and is key for greenhouse vegetable growers to meet the rising demand for year-round greenhouse produce. It will support the expansion of greenhouse operations, contribute to regional economic success, and provide even more fresh, nutritious, quality produce for Ontarians," says Joe Sbrocchi, general manager, Ontario Greenhouse Vegetable Growers.

The IESO is expecting electricity demand in the Windsor-Essex region to increase significantly due to strong agricultural growth, primarily from expansion in the

greenhouse sector and, to a lesser extent, in the cannabis industry says Peter Gregg, president and CEO of the IESO. The new transmission line from Chatham to north of Leamington will allow greater amounts of electricity to flow into southwestern Ontario from other parts of the province.

"Our forecasts show remarkable growth," says Leonard Kula, vice president of Planning, Acquisition and Operations, and Chief Operating Officer. "Electricity demand is expected to double in the Windsor-Essex region over the next five years, which is exceptional when you look at the province-wide picture of essentially flat demand in the years ahead."

The transmission line is expected to be complete by the end of 2025. To meet the electricity needs in the area in the shorter term, the IESO has



also requested Hydro One to develop and construct upgrades to existing transmission infrastructure and is exploring consumer energy management options with local utilities, municipalities, Indigenous communities, businesses and other stakeholders.

Source: Independent Electricity System Operator June 13, 2019 news release

Electricity demand is expected to double in the Windsor-Essex region over the next five years, which is exceptional when you look at the province-wide picture of essentially flat demand in the years ahead.

~ LEONARD KULA, INDEPENDENT ELECTRICITY SYSTEM OPERATOR

OFVGA ISSUES AND ACTIVITIES

No summer break for policy makers



GORDON STOCK
SENIOR POLICY ADVISOR &
GOVERNMENT RELATIONS,
OFVGA

Self-Directed Risk Management Program, with a goal of having a new design for Minister Hardeman's consideration in the fall.

In addition, the government's initial consultation on industrial electricity pricing ended in June, with future, more specific, proposals to be tabled for stakeholder consideration in the near future. The government is also moving ahead on environmental initiatives, including the renewal of the Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health.

Regarding waste, the government has hired David Lindsay, an advisor to tackle plastic waste and litter, improve recycling, increase products that can go into the blue box, and ensure producers are responsible for managing plastic and other packaging at end-of-life. Further, a working group has been struck to develop a roadmap to support compostable product innovation.

The OFVGA is continuing to interface with government and

closely watch the proposed regulatory changes to ensure that fruit and vegetable farmers are not negatively impacted. All formal submissions to government on relevant consultations are posted to the OFVGA website.

Federal election ramp-up

As the federal election approaches, the current government is doing its best to complete its commitments. Of note is the recent Canadian Food Policy, which is a \$134 million investment for various initiatives including food waste reduction, reducing food fraud, and Buy Canadian Promotion.

The federal government is also proposing a single-use plastics ban. It doesn't appear as though it will impact plastics used for farm production, such as row covers or crop protection jugs, but chances are it will impact fruit and vegetable packaging. If the proposal moves ahead, the plan is to begin banning specific plastic uses in 2021. The OFVGA will be working closely with the Canadian Horticultural Council



on mitigating any impacts of such legislation.

Ontario Food Terminal

The OFVGA remains engaged in the ongoing discussions around the future of the food terminal. A number of studies are in process, both industry and government-led. The government study is being undertaken by MNP, a national accounting, tax and business consulting firm. As part of this process, Bill George, OFVGA chair was interviewed and the

OFVGA assisted with distribution of a stakeholder survey to its members. The OFVGA has also provided industry data to assist with research into the value of the terminal to Ontario's fruit and vegetable farmers.

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

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

Provincial priorities

Although the Ontario Legislature will not be sitting until October 25, the year-old Ontario government continues to be quite active on many fronts. For example, work continues with respect to the

cleanfarms

OBSOLETE COLLECTION CAMPAIGN SEPTEMBER 20 – OCTOBER 1, 2019

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CHAIR'S PERSPECTIVE

What OFVGA's work means on the farm



BILL GEORGE JR.
CHAIR, OFVGA

vineyard or greenhouse?

I have to admit that before I became involved with OFVGA first as a director, then vice chair and now chair, I didn't really have in-depth knowledge of all the things the organization does for growers and how that translates back to the farm.

If it wasn't for the work of the OFVGA, my farm business could be much different.

Crop protection is a key example. The Pest Management Regulatory Agency (PMRA) is busy re-evaluating many of the products we use regularly in horticulture – what this means is that they're reviewing products and deciding whether or not they'll continue to allow us to use them.

As a grape grower, Mancozeb is one of our most cost-effective early-season sprays. Because of re-evaluation, we were in danger of losing all uses in our vineyards, but thanks to action taken by OFVGA and our member and partner organizations, we've managed to convince PMRA to take a second look, keeping the

product accessible to all horticultural growers for at least a few more years. I should note that if there are solid reasons why we should lose access to a chemistry, then we are supportive of that decision, but we need a good process to get us there.

This is a grassroots example of how OFVGA's work can directly impact growers and why it's so important that OFVGA be active on the crop protection file. We need a strong voice around that table, and we have that in our section chair, Charles Stevens, and crop protection advisor Chris Duyvelshoff.

Labour is another area where OFVGA has a direct impact on growers. We support the work of Foreign Agricultural Resource Management Services (FARMS) around the Seasonal Agricultural Worker Program (SAWP), which is so crucial for our sector. Certainly my own family wouldn't be operating the size of farm we are today if we didn't have SAWP workers, and I'm sure many other growers are in a similar situation.

But it's about more than just access to workers. OFVGA was heavily involved in labour when the previous provincial government raised the minimum wage to \$14 an hour with a promised subsequent increase to \$15. We weren't able to roll back the hike, but discussions with Labour Minister Laurie Scott and others in the new government ultimately led to cancellation of the move to \$15 and a promise of cost-of-living-based increases starting in 2020. We estimate this saved growers \$50 million per year.

Ken Forth tirelessly heads up the labour file for OFVGA, and is now supported by the latest addition to the OFVGA staff team, policy advisor Stefan Larrass.

Business risk management is another area where OFVGA can make a direct difference to a grower's bottom line. It was relentless lobbying by OFVGA and other farm organizations, for example, which resulted in the Risk Management Program and its hort-specific component, Self-Directed Risk

Management. We are part of the discussion around all crop insurance and risk management issues – we may not always get the results we push for, but led by section chair Mark Wales, we work hard to make sure the grower voice is heard.

Currently, the provincial government review of the Ontario Food Terminal is an issue that we're following closely and bringing grower concerns forward wherever possible. Another example is the federal carbon tax.

Sometimes it seems as though there is no end to the number of issues OFVGA could become involved with. As a member-based organization, we don't tackle commodity-specific files; rather, our approach is to take on umbrella issues that reach across the edible horticulture sector.

Our collective resources go farther and our voices are stronger through working together, and I'm proud of the difference OFVGA is able to make for Ontario growers.

Our organization is here to lobby on behalf of growers and to make sure the grower voice is heard where decisions are made.

We speak and write a lot about what the Ontario Fruit and Vegetable Growers' Association (OFVGA) does for growers – and we attend a lot of meetings on behalf of our members on everything from labour and crop protection to business risk management, environment and more.

But what does that actually mean in the orchard, field,

WEATHER VANE



Without legions of growers and their families across the country, there wouldn't be a horticultural industry valued at \$5.4 billion annually. Broccoli growers Ken Forth and his son Kenny are up early supervising the crew near Lynden, Ontario. Happy Canada Day! Photo by Glenn Lawson.

STAFF
Publisher: Ontario Fruit and Vegetable Growers' Association
Editor: Karen Davidson, 416-557-6413, editor@thegrower.org
Advertising: Carlie Melara 519-763-8728, advertising@thegrower.org

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OFFICE
355 Elmira Road North, Unit 105
Guelph, Ontario N1K 1S5 CANADA
Tel. 519-763-8728 • Fax 519-763-6604

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THE
GROWER

URBAN COWBOY

New industry giant likes horticulture's "direct link" to consumers



OWEN ROBERTS
U OF GUELPH

Horticulture and its close connection to consumers is highly valued by new industry giant Corteva Agriscience. The multi-billion-dollar company, which formed last year from the merger of Dow and DuPont, (and Pioneer, which was already a DuPont business) is off and running with its stock now trading publicly on the New York Stock Exchange...and it says its future includes a strong commitment to Canadian horticulture.

In early June, Corteva invited leading producer clients -- along with agricultural and business journalists from around the world (including three of us from Canada) -- to witness company officials ceremoniously ring the opening bell at the New York Stock Exchange to start the day's trading.

It was the first day the company's stock was publicly traded under its ticker symbol CTVA, culminating more than a year of flat-out, full-speed-ahead planning and preparation by virtually everyone in the 21,000-employee organization.

Before and after the opening bell, we had a chance to hear the company's story, ask questions about its approach, and gather information to tell readers, listeners and viewers why it was truly a pivotal day in global agriculture, agri-business

and consumer understanding.

To begin with, the New York Stock Exchange is the most powerful trading entity in the world. You don't get to trade shares there unless you have the chops to do so.

With a presence in 140-plus countries and net sales of \$14 billion last year, Corteva enters the ring as a heavyweight, strong enough to be among the world's biggest 500 companies.

And with that kind of capital, Corteva can make things happen, on and off the farm.

It lays claim to what it calls "a robust pipeline of active chemistry and technologies," which in real terms means it's introducing 21 new products globally in the next five years. So how about Canada, and specifically, horticulture?

That's a question welcomed by Bryce Eger, president of Corteva's Canada operation. "Horticulture is a very important part of the company's portfolio...and of Canadian agriculture, when you think of the Ontario side of it, as well as BC," he says. "And it's a close, direct link to the consumer."

Eger says Corteva structured the business to be sure there's coverage for the growers as well as the retailers that support the horticulture business. Canada is one of the company's six "regions," its own separate operating unit, intended to meet the needs of the Canadian marketplace.

He is clear that Canada "is not going to be a cookie cutter to what we have in the U.S." That said, the U.S. provides a convenient and familiar mother-ship for Corteva products.

On the product side, Eger says Canada is working closely with its U.S. counterpart because of regulatory similarities. Then there's the practical side of product development. "We find that because of the size and scale of



Bryce Eger, president of Corteva Canada

the U.S. business we're able to find some opportunity for new products, so our portfolio is going to continue to be strong in the hort business," he says.

Then there's the consumer side of Corteva. Eger describes the company's focus on biologicals and natural products over the course of the next few years as being consistent with its approach to consumers with safe, healthy, nutritious food. That sentiment is echoed by Jim Collins, the company's CEO, who says Corteva understands that consumers are the ultimate customers of both it and of Canadian farmers, who

have reached out to Corteva to ask for help telling the big story about agriculture in this country.

The story is one about sustainability, safety and affordability. But it is not well understood, and Collins says Corteva will take measures to make that story better known.

"We are committed to being transparent, to sharing information and knowledge and dispelling inaccuracies," he told reporters in New York. In fact, he noted, Corteva's mission statement clearly lays out this imperative, with its promise to "enrich the lives of those who

produce and those who consume."

How this mission manifests itself remains to be seen. But the gap in understanding for Corteva (and other companies) to help fill is immense and getting bigger all the time. Corteva has the ways and means to not only help growers be productive and profitable, but to also help advance agriculture, its perception and its understanding among consumers. What an incredible opportunity.

INTERNATIONAL

AUSTRALIA

National vineyard scan could be used for biosecurity

Consilium Technology has completed its National Vineyard Scan, which was conducted on behalf of Wine Australia to get a clear picture of the country's grape and wine sector.

The company used geospatial artificial intelligence for agriculture (GAIA) technology to capture satellite images of wine regions in Australia and provide highly accurate vineyard data covering five million hectares of land. This data will be used to assess planting

densities by geographical indication (GI) region and sub-region.

The vineyards covered a total area of 146,128ha, with a vine row length of 463,718km. These are set into 75,961 individual blocks with an average vine row density of 3.17km/ha. The vineyard area within each GI sub-region was also captured.

Wine Australia CEO Andreas Clark said: "This scan provides the sector with a very good baseline for follow-up

surveys that will be carried out over the next two years.

"The last ABS survey set the total reported area of vineyards at 135,133 hectares, about eight per cent less than the Vineyard Scan found, but because of the differences in the methods used it is unwise to assign all of that difference to growth in plantings. Some of that difference is likely to be the difference between estimated returns in the survey and actual mapping."

Wine Australia further added that the locations of all vineyard blocks detected have been mapped, providing information that can be used for emergency biosecurity responses.

Data provided by the company will replace the old Australian Bureau of Statistics paper-based sector survey, which was last published in 2015.

Source: Consilium Technology June 12, 2019 news release

EVENTS

FMC opens Canadian headquarters in Mississauga, Ontario

KAREN DAVIDSON

FMC Canada is focused on growing its fifth-place position in crop protection in Canada. As Darren Dillenbeck, country manager, FMC, explains, it's an advantage to be solely focused on crop protection without the distraction of a seed business.

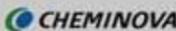
The company purchased Cheminova in 2015 and followed up with a strategic acquisition in late 2017 of DuPont's crop protection portfolio. It's been an intense transition that's culminated with new headquarters space in Mississauga, Ontario.

"We're a crop protection company, not a seed company," declared Dillenbeck at the official headquarters opening on May 30, 2019.

He underlined the importance of the largest transaction in company history which transformed the product portfolio with the addition of the diamides, one of the best-selling families of insecticides worldwide. Think of products such as Exirel, Altacor and Coragen.


An Agricultural Sciences Company

PAST • PRESENT • FUTURE

1883 - 1884 Retired inventor John Bean sets up shop behind his house to build a better insecticide spray pump. 	1904 The Bean Spray Pump Co. is incorporated on May 20. 	1943 Food Machinery Corporation moves into the chemical business after acquiring the Niagara Sprayer & Chemical Co. 	1948 Company name is changed to the Food Machinery and Chemical Corporation after acquiring Westvaco Chemical Corp. 	1956 - 1961 Company expands into new global markets before changing its name to FMC Corporation in 1961. 	1985 FMC acquires Lithium Corp. of America, the world's largest producer of lithium, used in batteries, pharmaceuticals and more. 
1998 FMC of Canada Limited becomes an active federal corporation. 	2001 FMC Corporation spins off its equipment division, FMC technologies, to become solely a chemical company. 	2007-2008 FMC Canada brings new solutions to growers with products like Aim® EC herbicide and Authority® herbicide. 	2015 FMC acquires Cheminova, expanding its position in the global crop protection market. 	2017 FMC becomes the world's 5th largest crop protection company after selling their Health and Nutrition businesses to DuPont and acquiring select technologies and assets in return. 	2018 FMC was the honoured recipient of "Best R&D Pipeline" from the Agrow Awards. 
2019 FMC spins off the lithium business and establishes its first corporate office in Canada as a pure-play agricultural company. PrecisionPac® Application Innovation celebrates 10 years of providing customized herbicides. 			2020+ FMC Canada will draw from its global R&D pipeline, and local R&D capabilities, to serve the unmet needs of Canadian farmers. 		

In an interview with **The Grower**, Dillenbeck indicated that the company intends to launch new modes of action in about five years. In the interim, growers can expect label extensions and refinement of MRLs. He pointed to a strong regulatory team with expertise in insecticides.

In addition to its corporate head office in Ontario, FMC Canada maintains a research and development site in Hanley, Saskatchewan and a manufacturing centre in Calgary, Alberta.

"Opening this new office demonstrates that we are here for the long term and committed to growing the Canadian FMC business," says Dillenbeck. "We want to be a trusted partner to more farmers

across the country and cultivate stronger relationships with channel partners. To accomplish this, we need to have a strong presence that spans eastern and western geographies so that our customers know they are going to be supported by FMC every step of the way."

By the numbers:

- Global revenue: \$4.3 billion
- Revenue by region: 25% in North America
- Global workforce: 24% in North America
- Sales mix: 58% insecticides, 29% herbicides, 6% fungicides
- Employees in Canada: 60+

For more information about FMC Canada, visit fmccrop.ca

Clean plant network for grapevines



L-R: Chris Bittle MP (St.Catharines), Hon. David Lametti, Bill Schenck, vice-chair, CGCN, Vance Badawey MP (Niagara Centre) and Jim Reschke, vice-president, operations, Konzelmann Estate Winery.

The Canadian Grapevine Certification Network (CGCN) will receive more than \$2.3 million through the Canadian Agricultural Partnership's AgriAssurance program to create a network of certified, virus-free grapevines. The support will ensure the long-term viability of the Canadian grape and wine sectors.

As part of this project, CGCN will catalogue and assess existing samples from nurseries and grape growers across Canada. A database will then be used to trace back every vine produced through this program and planted in a grower's vineyard back to the mother plants. This will

help the CGCN keep Canada's vineyards virus-free.

"This funding is instrumental to the creation of a clean plant network for grapevines in Canada," said Hans Buchler, chair, CGCN.

The network includes the Grape Growers of Ontario, the British Columbia Wine Grape Council, l'Association des vignerons du Québec and the Grape Growers Association of Nova Scotia.

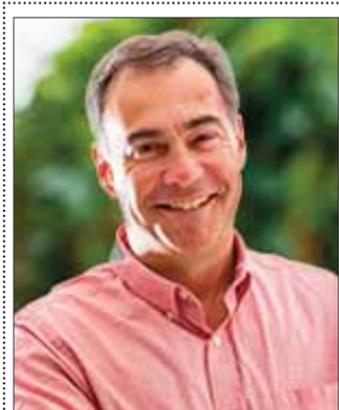
Source: *Agriculture and Agri-Food Canada June 15, 2019 news release*

COMING EVENTS 2019

- | | |
|---------------|--|
| July 5 | Berm Outreach Day, Muck Crops Research Station, Bradford, ON |
| July 18 | Haskap School, Agricultural Building, University of Saskatchewan Campus, Saskatoon, SK |
| July 19 | Haskap Field Day, University of Saskatchewan Campus, Saskatoon, SK |
| July 18-19 | Annual Conference of Federal-Provincial-Territorial Ministers and Deputy Ministers of Agriculture, Quebec City, QC |
| July 19-21 | International Cool Climate Chardonnay Celebration, Niagara Region, ON |
| July 20 | Glen Road Organics presents Organic Matter Matters with Dr. Elaine Ingham, Woodville, ON |
| July 21-24 | International Fruit Tree Association Summer Study Tour, Norfolk and Georgian Bay areas, ON |
| July 25 | Canadian Horticultural Council Apple Working Group, Sheraton Hotel, Hamilton, ON |
| July 28-Aug 1 | 103rd Potato Association of America Annual General Meeting, Delta Winnipeg, Winnipeg, MB |
| Aug 1 | Nova Scotia Fruit Growers' Association Summer Tour |
| Aug 3 | Food Day Canada |
| Aug 10-11 | Carp Garlic Festival, Carp, ON |
| Aug 14 | Peak of the Market Annual Family Fun Day, Winnipeg, MB |
| Aug 16-17 | Carrotfest, Downtown Bradford, ON |
| Aug 20-21 | North American Strawberry Growers' Association Summer Tour, Drury Inn & Suites Pittsburgh Airport Settlers Ridge, Pittsburgh, PA
www.nasga.org . |
| Aug 21 | Ontario Potato Research Field Day, Elora Research Station, Elora, ON |
| Aug 22 | Ontario Potato Association Field Day, HJV Equipment, Alliston, ON |
| Aug 22 | U.S. Apple Association Crop Outlook and Marketing Conference, Chicago, IL |

RETAIL NAVIGATOR

Consumers are changing



PETER CHAPMAN

Last month we started a new series to help producers and processors get more products in more shopping carts more often. Production is critical, however you need to sell all the great products you produce.

One of the most important components of selling your products is to understand what consumers are doing or could be doing with them. You need to help them see the potential.

We have developed a process called **CART** to help you sell more products. There are four essential ingredients in this recipe for success:

Consumers
Alignment with your customers
Retail plan to sell your products
Trust with consumers and customers

Walk through a store and think about how consumers are using your products and other items in the store today vs. how they might have in the past. If you are in the produce department, how many of your items are used in smoothies or recipes with Asian flavours? Consider that there are new consumers in the market. Are they buying your produce or shifting to other items?

This does not happen overnight but buying behaviour changes as food trends and demographics change. All of these shifts in the market have an impact on how your products are being used.

How do they use your products?

Every year, I would recommend that you ask the following questions. If the answers do not change then keep on going, however when you start to see shifts you need to adapt and keep your customer informed as well.

For example:

How do they use your products?

Do you see new trends in food where your product could grow in popularity or on the flip side, be replaced?

With changes away from the traditional three meals a day, will this deliver opportunities or problems for you? If your

product is an ingredient in smoothies or afternoon snacks this might be good. If you are a proponent of a sit-down meal that takes 45 minutes to prepare you will see declines.

How do they prepare the product?

In this world where many consumers want everything faster can you do some of the preparation or give them ideas to reduce the time required?

Is your product relevant to today's consumer?

Do they consume the product in its raw state or use it as an ingredient?

Does your packaging and product size conform to the most popular uses?

Can you offer more insights or guidance on your packaging and drive consumption?

It is more important than ever to watch industry trends and help consumers make the decision to buy. They are bombarded with information and messages so do not get left behind. We know packaging is going to change a lot in the near future. You need to incorporate changes to help consumers use more of your product as part of these packaging changes.

There are many examples where giving consumers information, ideas and incentives to use products differently will drive consumption. Grilling asparagus, making popsicles with fresh fruit and selling mini potatoes that have spice on them all drive consumption. It is our job to plant the seed with consumers. Do not wait for your customers to do it.

Including the focus on how consumers are using your products will be very important in your sales strategy. You can share the information with consumers and customers. With great ideas and the right program you will see more of your products in more shopping carts more often.

If you have any questions about understanding how consumers use your products please give me a call at (902) 489-2900 or send me an email at peter@skufood.com.

WHAT'S IN STORE**More food waste initiatives rolling out**

In June, Loblaw announced it would be rolling out Flashfood to 250 stores by the end of the summer. Consumers using the app will select a store and then see what items are available for purchase at discounts up to 50 per cent of regular retail. These are products that have been



removed from the shelf for quick sale. This is one more initiative in the market to give consumers choice and reduce food waste. Shoppers pay on the app and go to the store in a designated area to pick up their product.

It will be interesting to see how consumers adopt these offers. Will they be organized and motivated to go into the app and find what they need? I

would expect many will do this while they are at the store, as opposed to in advance.

Suppliers need to watch these initiatives. Check to see if your products are showing up regularly and challenging your own business for opportunities to reduce food waste.

Peter Chapman is a retail consultant, professional speaker and the author of A la Cart-A

suppliers' guide to retailer's priorities. Peter is based in Halifax N.S. where he is the principal at GPS Business Solutions and a partner in SKUfood.com, an online resource for food producers. Peter works with producers and processors to help them navigate through the retail environment with the ultimate goal to get more of their items in the shopping cart. skufood.com






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ONTARIO BERRY NEWS

Registrations for Spotted Wing Drosophila, June 2019

Product	Crops**	Rate	Preharvest Interval	Restricted Entry Interval	Max # applications/year	Re-treatment interval
Delegate spinetoram 25% Group 5 Reg. #28778	Bushberries	315-420 g/ha	3 days	12 hours	3	7 days
	Caneberries	315-420 g/ha	1 day	12 hours	3	7 days
	Strawberries	280 g/ha	1 day	12 hours	3	7 days
	Peaches, nectarines	420 g/ha	1 day	12 hours	3	7 days
	Apricots, plums	420 g/ha	3 days	12 hours	3	7 days
	Sweet, tart cherries	420 g/ha	5 days	12 hours	3	7 days
Entrust spinosad 240 g/L Group 5 Reg. #30382	Bushberries	334-440 mL/ha	1 day	When dried	3	5 days
	Caneberries	334-440 mL/ha	1 day	When dried	3	5 days
	Strawberries	292-364 mL/ha	1 day	When dried	3	5 days
	Sweet cherry, tart cherry, plums, apricots	364 mL/ha	3 days	When dried	3	7-10 days
	Peaches, nectarines	364 mL/ha	1 day	When dried	3	7-10 days
Exirel cyantraniliprole 100 g/L Group 28 Reg. #30895	Bushberries	1-1.5 L/ha	3 days	12 hours	3-4 (max. 4.5 L/ha)	7 days
	Caneberries	1-1.5 L/ha	3 days	12 hours	3-4 (max. 4.5 L/ha)	5 days
	Stone fruit	1-1.5 L/ha	1 day	12 hours	3-4 (max. 4.5 L/ha)	5 days
Harvanta 50SL Cyclaniliprole 50 g/L Group 28 Reg. #32889	Stone Fruit	1.2-1.6 L/ha	7 days	12 hours	3-5 (max. 6 L/ha)	7 days
	Grapes	1.2-1.6 L/ha	7 days	12 hours	3 (max 4.8 L/ha)	7 days
Mako cypermethrin 407 g/L Group 3 Reg. #30316	Bushberries	150-175 mL/ha	2 days	12 hours	2	7 days
	Caneberries	150-175 mL/ha	2 days	12 hours	3	7 days
	Strawberry	150-175 mL/ha	2 days	12 hours	3	7 days
	Sweet, tart cherries	150-175 mL/ha	2 days	12 hours	2	7 days
Malathion 85E For suppression only. malathion 85% Group 1B Reg. #8372 Use a maximum of 1000 L water per ha	Blueberries	1 L/1000 L water	1 day	2 days	3	7-10 days
	Strawberries	1 L/1000 L water	3 days	12 hours	2	7-10 days
	Currants, Gooseberries	1 L/1000 L water	1 day	12 hours ¹ / 4 days ³ (Gooseberries)	3	7-10 days
	Raspberries, Blackberries	975 mL/1000 L water	1 day	1 day raspberries, 12 hours blackberries	2	7-10 days
	Peach	610-855 mL /1000 L water	7 days	1 day except 3 days for	1	7-10 days
	Sweet, tart cherries	610-855 mL /1000 L water	3 days	1 day	1	7-10 days
	Plum	610-855 mL /1000 L water	3 days	1 day except 3 days for hand thinning	1	7-10 days
	Nectarine	610-855 mL /1000 L water	7 days	12 hours	1	7-10 days
	Apricots	610-855 mL /1000 L water	7 days	12 hours except 2 days for hand arvest and 3 days for hand thinning	2 with 10 day interval	7-10 days
	Grapes	880 mL/1000 L water	3 days	12 hours ¹ /4 days ³	1	N/A
Success spinosad 480 g/L Group 5 Reg # 26835	Bushberries	165-220 mL/ha	1 day	When dried	3	5 days
	Caneberries	165-220 mL/ha	1 day	When dried	3	5 days
	Strawberries	145-182 mL/ha	1 day	When dried	3	5 days
	Cherries	182 mL/ha	3 days	When dried	3	7-10 days
	Peaches, nectarines	182 mL/ha	1 day	When dried	3	7-10 days
	Apricots, plums, prunes	182 mL/ha	3 days	When dried	3	7-10 days
	Grapes	182 mL/ha	7 days	When dried	3	7-10 days
Imidan 70 WP phosmet 70% Group 1B Reg. #29064	Blueberries	1.6 kg/ha	15 days	3 days ¹ /15 days ²	2	N/A
	Peaches	2.68 kg/ha	14 days	7 days ¹ /14 days ²	4	N/A
	Pears	2.68 kg/ha	14 days	7 days ¹ /14 days ²	5	N/A
	Plums	2.68 kg/ha	14 days	7 days ¹ /14 days ²	3	N/A
	Cherries	2.68 kg/ha	7 days	3 days	4	N/A
	Grapes	2.2 kg/ha	14 days	14 days	3	N/A
Scorpio Ant and Insect Bait For suppression only. Spinosad 0.07% Group 5 Reg # 33306	Bushberries, Caneberries, Strawberries	35-45 kg/ha	1 day	12 hours	3	As the bait is consumed or every 4 weeks
	Grapes	35-45 kg/ha	7 days	12 hours		As the bait is consumed or every 4 weeks

¹ Re-entry interval² Pick-your-own re-entry interval³ Re-entry interval for hand harvest, pruning, training, thinning

Please note: this is a reference sheet and does not replace the labels. Continue to check the product labels for more specific instructions and uses.

**Crop groups:

13-07A Caneberries includes raspberries and blackberries and other brambles.

13-07B Bushberries includes blueberries, currants, gooseberries, saskatoon berries, sea buckthorn, elderberries, etc.

12-09 Stone fruit includes apricot, sweet and sour cherry, nectarine, peach, plum

Spotted wing drosophila is a serious pest in Ontario and suppression products may not provide acceptable levels of control. Do not make more than 2 consecutive applications of Group 5 insecticides.

MAKING MOVES

Driver shortages persist



JENNIFER MORRIS

It is a well documented and researched fact that there has been an ongoing driver shortage in the transportation world. Currently there are approximately 20,000 truck driver positions vacant in Canada, which is nearly double the number from 2016. No one disagrees there is an issue, but where everyone diverges is the why and how to fix it. Whether

looking for a driver to work direct for a shipper or to work for a larger for-hire carrier, the reasons and solutions can apply to both.

A shortage of drivers is due to the fact there are few women and young people in the role. Currently the average age of a driver in Canada is 55 years old, and only 15 per cent of drivers are under the age of 30. The largest and most diverse workforce in the market is not being engaged for these positions. It is estimated that only three per cent of truck drivers in Canada are women, regardless of women making up 48 per cent of the workforce. A study done by Abacus on millennial workers found that 16 per cent of men and seven per cent of women would strongly consider a career in trucking, while 29 per cent of men and 62 per cent of women would not even consider it. The big question is why are these people not

interested in this position.

While some people think it's purely a perception issue, others suggest a systemic issue with how the transportation industry operates. Perhaps the answer is both.

Doing the same thing over and over and expecting new results is how the transportation industry has been trying to attract new and younger candidates. Clearly, this approach is not working. When recruiting for younger, more diverse talent, it is important to outline a company's intentions and purpose. Millennials specifically need to feel their career makes a difference and they crave specific feedback for growth. These things are not typically communicated by trucking companies or others that hire for truck driver positions. Ensuring that the role of truck driver has a positive brand image needs to be an industry effort.



Photo by Glenn Lawson

This brings us to the systemic issues in the transportation industry. The industry has a laundry list of issues and some of them contribute to turn-over and lack of interest in the industry as a career path. Driver pay is not regulated and therefore fluctuates heavily based on demand and drivers either need to run further from home or make less money. Also, there are policies at some shippers and receivers that negatively impact drivers -- everything from excessive fines to wait-times that border insane. Sadly,

truck drivers don't get the respect they deserve. This contributes to drivers leaving the role and younger people not being interested.

Companies looking for people to fill these roles are competing with more attractive and better branded industries. Unless there are major changes to policy and how truck driving is sold to the next generation, shortages will continue to increase along with price and service failures.

How will your company adapt?

FOCUS: BUSINESS MANAGEMENT

Protecting the farm against volatile global markets

KAREN DAVIDSON

Focus on farming. And protect the business from global volatility.

That's the counsel of Karl Schamotta, chief market strategist for Cambridge Global Payments. He operates out of a downtown Toronto tower, but talk to him for five minutes and it's clear -- he still has boots on the ground. Fifteen years ago, his career started in Calgary working in foreign exchange and he still works with growers and agricultural producers across Canada.

Cambridge Global Payments is a specialist in foreign exchange, working with Canadian companies -- some of them in the horticultural sector -- that do business across borders. Even if you're not an exporter, his perspective is valuable -- many farm inputs come from outside Canadian borders and are ultimately priced in foreign currencies.

"If you look at the flow of agricultural commodities around the world, the map is being redrawn," says Schamotta.

"Production and distribution technologies are evolving quickly, and the 'trade war' between the United States and China has spilled over to affect food supply chains. Rapidly-shifting tariff rules -- imposed by both sides -- are forcing buyers to look closer to home for some products -- and much farther afield for others."

On the bright side, consumers in emerging markets are rapidly moving up the caloric consumption tables and demanding better quality all the time. But many traditionally safe and stable markets no longer exist. Soybeans for example, are now trapped within North American borders, and Brazil is stepping up to fill China's demand.

These sourcing changes are resulting in extreme swings in commodity prices. And they have reverberating effects on Canada.



"The vulnerability of the ag sector overall has deepened and horticultural producers are right there on the front lines," says Schamotta.

To make things more complicated, changes are afoot in the currency markets. "After almost two years of relative calm, exchange rates are beginning to move again. With the global economy slowing and business sentiment deteriorating, central banks are reversing direction and are beginning to cut interest rates."

The U.S. Federal Reserve will probably move first, but Schamotta notes that the Bank of Canada is likely to follow soon after. "If the gap between U.S. and Canadian rate expectations narrows, volatility will rise and the Canadian dollar could weaken further."

If you're a wild blueberry grower in Nova Scotia or a greenhouse vegetable grower in Ontario or a cherry grower in British Columbia, the question is how to act on this information. Here are three strategies:

1) Think ahead. Use tools such as forward contracts and currency options to lock in the value of your sales over time. This reduces exposure to exchange rate movements and brings predictability to your farm operations.

2) Harness volatility. Use market orders (bids) to target attractive levels in the currency markets. You may be buying equipment on 60-day payment terms, or selling to a U.S. buyer 90 days in advance. This gives you time to place an

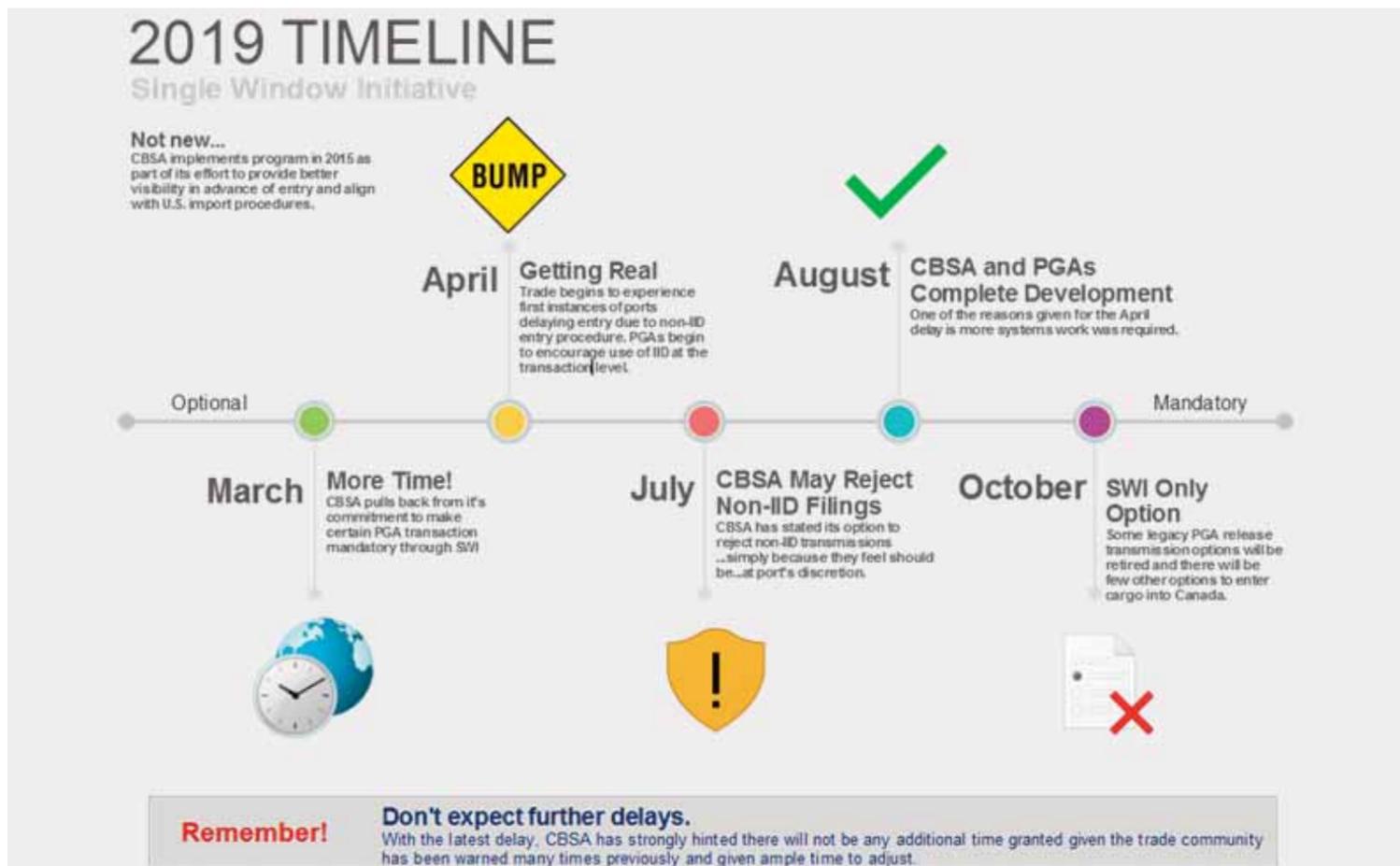
order that automatically triggers when your desired level is reached.

3) Keep it simple. Don't try to outperform the market every time you trade -- instead, primarily look for ways to remove risk and protect your margins. Volatility is like rainfall -- the right amount can help you grow, but too much can be devastating.

Building a stable financial foundation is the key to capitalizing on all the changes occurring in an increasingly turbulent global economy. An optimist, Schamotta predicts a bright future for Canadian growers who are positioned to cultivate new opportunities.

FOCUS: BUSINESS MANAGEMENT

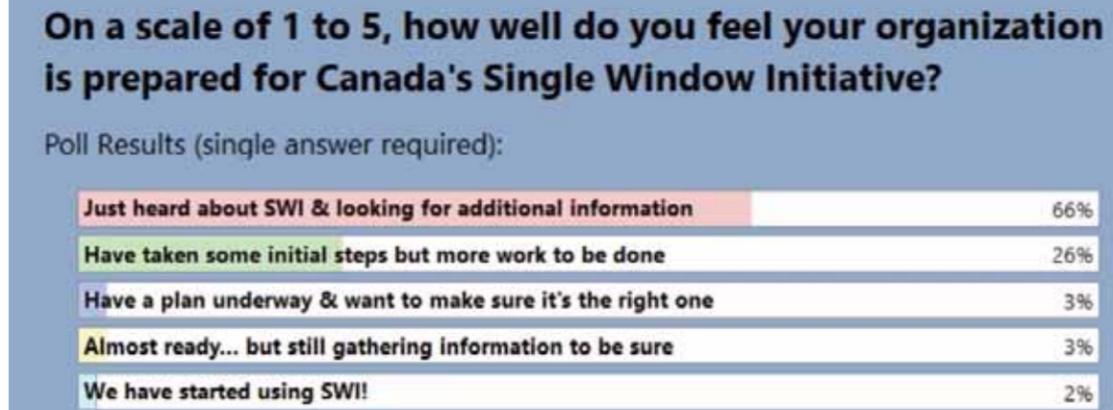
What you need to know about Canada's new Single Window Initiative



KAREN DAVIDSON

If you are an importer or grower/shipper bringing produce from the United States on a back haul, then July 2019 is a critical month for you. That's when the Canada Border Services Agency (CBSA) could start enforcing new rules under the Single Window Initiative (SWI) on a discretionary basis.

The SWI is designed to streamline the sharing of commercial import data between the Canadian government and nine of its participating departments. Grower/shippers will be most familiar with two of them: Health Canada and the Canadian Food Inspection Agency. As of April 1, the legacy process started to transition. The hard deadline for certain Participating



Government Agencies (PGAs) is to be announced for fall 2019, but these next few months could have brutal impacts if you're not prepared.

Can't file the proper Integrated Import Declaration (IID)? Don't have the supporting certificates for produce or safe packaging? Trying to get across the border on a Friday evening? Then your load of

perishables could be hung up over the weekend without access to the government officials that can untangle the electronic imbroglio.

These are the stern warnings from Gary Price, vice-president for North American custom services for Delmar International Inc. The company, specializing in international freight forwarding and custom brokerage, does 10 per cent of its business in produce.

"CBSA is encouraging people to adopt the new system, but the fact remains that as of July 1, its officers may be given the discretion to reject entry to Canada if the new system of SWI/IIDs isn't used. This is a risk for the trading community because, as of yet, there's no specific criteria for rejection. I encourage everyone to use the SWI system or else you and your clients could be in for a world of hurt."

The advantage of Single Window Initiative is that it's a single portal for filing data, however more data and supporting certificates may be required. For example, a grower may have indicated a skid of carrots in the past, whereas now, the

requirement is to state 48 20-pound boxes of carrots. Another example is that Health Canada may require certificates or other documentation for certain types of packaging. Here's an example. Imports of food packaging may require additional information such as the manufacturer's name, date the goods were manufactured, license numbers, batch or lot number and other details.

As a grower, you might think that SWI does not apply to you. But think again if you are importing packaging materials across the U.S. border. Information must be supplied to show that the packaging is safe. Price advises, "Start now getting your paperwork and information in order for fall 2019."

Price also warns grower/shippers to quiz their brokers as to readiness: "The fact remains that the U.S. considers Canada a small market. So the dialogue needs to be frank between supplier and importer. Convey what the importer needs to do and by when."

"If you have not started now, you are late," says Price. "Fall 2019 is not far away."

In a survey conducted by

Delmar International during a May 2019 webinar, the question was posed as to how well each participant was prepared for the Single Window Initiative. Only two per cent had started using the system, while 92 per cent had just heard about SWI or were taking initial steps.

Why is Single Window Initiative so important?

Should there be a food recall, health authorities should have an easier time tracking down the source of shipments. SWI pushes risk assessment to an earlier point in the value chain and provides more confidence to the decisions being made before produce reaches the border. Canada's SWI aligns with what the Americans have already done with their Automated Commercial Environment (ACE). The idea is to leverage the power of electronic systems.

The benefits, as Price outlines, are that "paperwork" can be filed up to 90 days before arrival of cargo in most cases. That's a benefit if sea cargo is involved. The CBSA is prioritizing IID transactions over those which are filed under a legacy system.

The challenges are that importers are required to obtain and maintain data for existing and new products. More detail is required for quantities and packaging units.

What are the challenges ahead?

As of July 1, 2019, the CBSA criteria for rejecting legacy transmissions is unclear. CBSA has yet to define the service standards for IID transmissions. Postal and hand-carry IID transaction require telephone notification to CBSA at port of entry. Investment in system upgrades and ongoing updates will continue as SWI requirements evolve.

As Price underlines, the learning curve for all parties is steep and requires practice, patience and time. CBSA cannot see why an IID transmission was rejected by a participating government authority. CBSA and its government partners are not yet completely trained or aligned on both the adoption and use of SWI. There are reports of conflicting information and instructions being received between Ottawa and some ports of entry.

Bottom line advice? Relying on vendors to provide the right information and to do the right thing later is a high-risk bet. As a business owner, take ownership of this process.

For more information, contact: advisoryservices@delmar.ca

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FOCUS: BUSINESS MANAGEMENT

How to protect privacy of farm data

KAREN DAVIDSON

Who owns my farm data? That's a frequent question posed to Greg Thomarat, Farm Credit Canada (FCC) marketing and sales manager for AgExpert accounting software.

The team behind FCC AgExpert says it's been much easier to convince farmers to digitize their data after the program was certified by Ag Data Transparency in the United States. In fact, AgExpert now manages data from more than 6,500 active users who farm 2.3 million acres across Canada. These include fruit and vegetable growers.

"Our research has proven that there is still a large deficit in customer trust with ag-tech companies which manage farm data," says Thomarat. "At FCC, this is something we have worked extremely hard to build and will continue to take very seriously."

The reasons behind lack of trust are multifold. 2018 could be termed the year of the data breach. Trusted companies fell from grace, most notably Facebook in September 2018 with personal data stolen from 50 million users.

More than that, precision agriculture has taken hold with all the benefits of yield collection data. When aggregated, the owner of that data has a significant storehouse of information that can be manipulated for profit regarding inputs.

Five years ago, the American Farm Bureau addressed the burgeoning issue with corn, soybean, wheat and potato farmers along with companies such as John Deere. The result was the Ag Data Transparency project which developed 13 core principles. The term agriculture technology provider was coined and in typical industry fashion, has developed its own acronym: ATP.

Flash forward and key American agribusinesses are on board. Farm Credit Canada was the first Canadian company

to be certified in 2018.

Through FCC's extensive research, it became clear that Canadian farmers want access to their farm data from any device, any time, any place. While desktop applications were extremely effective, the limitations in the technology were apparent. FCC developed a cloud-based, complete farm management platform, encompassing both accounting and field record-keeping. But earning trust is still a work in progress.

As Greg Thomarat explained to the Canadian Horticultural Council annual general meeting earlier this year, FCC did a deep dive on 2,001 farmers in late 2018 and the results revealed a skeptical audience.

"We're moving backwards on trust," Thomarat told the horticultural crowd, sharing the finding that 58 per cent of those surveyed had not changed their comfort level with organizations outside the farm in the last two years. In fact, 25 per cent have become less comfortable.

Here are some of the farmer quotes:

"I have a deep seated mistrust of the digitization of my farm information so I avoid it as much as possible."

"The agreements that we are required to accept are too long. I just assume that I am not agreeing to anything out of the ordinary and so I don't read the full agreement."

"Sometimes I worry about privacy and companies being hacked and losing all the data and it being compromised."

FCC asked an important survey question: When considering which technology or service provider to use, how important are the conditions governing the use and treatment of your data by an outside party? Seven out of 10 respondents replied: very important. But in a follow-up question, only one in four actually understood who owns the data.



10 QUESTION CERTIFICATION

- 1 What categories of data does the product or service collect from me, the farmer?
- 2 Do the Ag Technology Provider's (ATP) agreements address ownership of my data after my data is transferred?
- 3 If the ATP contracts with other companies to provide data related services, does the ATP require these companies to adhere to the ATP's privacy policies with me?
- 4 Will the ATP obtain my consent before providing other companies with access to my data?
- 5 After I upload data to the ATP, will it be possible to retrieve my original complete dataset in an original or equivalent format?
- 6 Will the ATP notify me when its agreements change?
- 7 Will the ATP notify me if a breach of data security occurs that causes disclosure of my data to an outside party?
- 8 Upon my request, can my original dataset be deleted when my contract with the ATP terminates?
- 9 Do the ATP's agreements establish how long my original datasets will be retained?
- 10 Do the ATP's agreements address what happens to my data if the ATP is sold to another company?

Digital literacy needs to improve in order to build trust. As one farmer said, "Companies in general have greatly improved how they communicate their intentions in handling my farm data, however, they need to be more transparent in what they actually do with it. Are they using the data to improve products and services or is the data mined for resale?"

Farm business owners need to ask the right questions. FCC probed its survey respondents about what proportion

requested prior approval to share data with an off-farm company's third party business partner or affiliate. Only a few respondents – 9% -- said they had asked for this sign-off.

Bottom line. Here are the three questions to ask:

- Who owns my farm data?
- If I cease doing business with you, can I take my data with me?
- Who are you sharing my data with and why?

Update on minimum wage rates

It's already a hot summer in British Columbia's Okanagan Valley with temperatures over 30°C the week of June 10 triggering an early start to cherry picking. What's also sizzling is the hike in minimum wage rates. The rate moved from \$12.65 per hour to \$13.85 per hour in June.

A review of all provinces shows the differences between provinces across the country. For example, Ontario's minimum wage is \$14 per hour whereas Quebec's is at \$12.50 per hour.

Source: Retail Council of Canada



MINIMUM HOURLY WAGE RATES AS OF JUNE 1ST, 2019

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CROP PROTECTION

Federal action needed on crop protection



CHRIS DUYVELSHOFF
CROP PROTECTION ADVISOR,
OFVGA

Parliament will soon be breaking for summer and with a fall federal election coming, a different assembly of representatives will be heading to Ottawa in October. With sitting MPs and those running for office campaigning around their constituencies this summer, opportunities exist to help promote the challenges faced by crop protection. As a new parliament reconvenes in October, there are a few actions that would go a long way in helping to support effective regulation of crop protection in this country. Here are a few key issues to keep in mind if you're talking to your current and/or future representative in Ottawa.

The regulation of crop protection products in Canada is primarily the responsibility of the Pest Management Regulatory Agency (PMRA). This includes registration and re-evaluation of all active ingredients for both domestic and commercial uses including agriculture. The Pest Control Products Act requires that the PMRA perform re-evaluation of each registered crop protection material every 15 years to determine if uses are acceptable for current standards.

The current re-evaluation program at PMRA is not sustainable – as noted by PMRA itself. Due to many new active ingredients registered since cyclical re-evaluation began, the workload from this process continues to increase. There are 25 active ingredients currently scheduled for re-evaluation commencing in 2019, 34 in 2020 and 50 in 2021. Not to mention that individual re-

evaluations are becoming more complex. Re-evaluation workloads are already exceeding available resources at PMRA resulting in delayed decisions and the future demand is unsustainable.

The PMRA must modernize the re-evaluation program to keep up. However, more resources are needed to get the job done. Especially if the PMRA is to consider additional information in its analyses as requested by agriculture. A well resourced and effective PMRA is a benefit for growers and promotes confidence in Canada's regulatory system and for our trading partners. To enable PMRA to make the best possible analysis, in light of its increasing workload, sufficient funding is needed to support timely decisions.

Aside from its own resources, another significant challenge for PMRA during re-evaluation has been access to water monitoring data in Canada. Any detections of and the levels of crop protection materials in freshwater bodies are considered in the environmental assessments, as they should be. However, this has been a consistent data gap for the PMRA as much of this data has been of limited quality or non-existent for active ingredients of interest.

There are recent notable re-evaluations where a lack of Canadian data left uncertainties in the scientific analysis conducted. This is even stated in some PMRA decision documents, for example "...robust monitoring data were available for areas of Ontario, Quebec, and Saskatchewan. Monitoring data were typically scarce or not robust for other areas of Canada." Like any other data gap, without real world information, models will be used and these are typically deliberately conservative. Current water monitoring data are largely collected by provinces and some non-government organizations. There is no standard program between provinces and the intensity and volume of sampling varies widely across Canada. No single point of coordination exists.

Federal participation and



Photos by Glenn Lawson



coordination of water monitoring activities are needed to generate robust and comprehensive data for all areas of the country. Environment and Climate Change Canada is well suited for this mandate. A national water monitoring program would not only help PMRA in making more accurate assessments but also to reinforce to the Canadian public that agriculture takes its environmental impact seriously, this performance is being measured, and acted upon based on real world data – not models.

Secondly, an invaluable initiative for Canadian horticulture has been the Minor Use Program led by Agriculture and Agri-Food Canada's Pest Management Centre. Without its existence we would not have nearly the number of crop protection registrations for horticulture in Canada. The program has been a great

success and its importance will not diminish with the number of uses now being cancelled through re-evaluation. There will be key gaps in the coming years as labels change or as products are withdrawn. New registrations are needed and Minor Use must continue to be well supported to serve the needs of Canadian growers.

Finally, as written about previously in the Crop Protection Column, Canada maintains an antiquated policy of a 0.1 ppm general maximum residue limit (MRL). Essentially all countries that still do employ a general MRL have now set a limit of 0.01 ppm or 10 per cent of the Canadian limit. Only New Zealand also still retains a general MRL of 0.1 ppm. Many other countries simply avoid having a general MRL altogether, including Australia and the United States, and establish their own specific

MRLs for all approved active ingredients.

As discussed in that previous article, having this much higher general MRL simply means Canada is an easier market to access for foreign food exporters. Exporters from Canada do not share this advantage. Canada should eliminate this generous allowance and align with other countries globally – either adopt the 0.01 ppm standard or transition to a no-default policy and set each MRL. The Canadian Food Inspection Agency should then be prepared to enforce this standard – rejecting or removing product that doesn't meet MRLs.

Canada's regulatory system for crop protection is complex and rigorous. Improvements are possible and needed and will not only help growers but boost confidence in our regulatory system.



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MINOR USE

Quadris Top fungicide label expanded

JIM CHAPUT

The Pest Management Regulatory Agency (PMRA) recently announced the approval of an URMULE registration for Quadris Top fungicide for control of anthracnose and powdery mildew on crop subgroup 13-07G low-growing berries (strawberries, lowbush blueberries, lingonberries, bilberries, etc.) in Canada. Quadris Top fungicide was already labeled for use on a number of crops in Canada for control of several diseases.

This minor use project was submitted by Agriculture and Agri-Food Canada, Pest Management Centre (AAFC-PMC) 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 disease management decisions within a robust integrated disease management program and should consult the complete label before using Quadris Top fungicide.

Difenoconazole is toxic to aquatic organisms, fish and mammals. Azoxystrobin is toxic to freshwater and estuarine/marine fish and aquatic invertebrates. Azoxystrobin can be persistent for several months or longer. Azoxystrobin has degradation products which have properties similar to chemicals which are known to leach through soil to ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow may result in ground water contamination. Do not contaminate aquatic habitats when spraying or when cleaning and rinsing spray equipment or containers.

Difenoconazole is persistent and may carry over. It is

Crops	Pest(s)	L product per ha	Applications information	Days Before Harvest
Berry, Low Growing, Subgroup 13-07G: (except Cranberry) Bearberry; Bilberry; Blueberry, lowbush; Cloudberry; Lingonberry; Muntries; Partridgeberry; Strawberry; cultivars, varieties, and/or hybrids of these.	Anthrachnose, Powdery mildew	0.87 – 1.0	Begin applications prior to disease onset when conditions are conducive for disease. Apply Quadris Top on a 7- to 14-day schedule making no more than 2 sequential applications before alternating to another fungicide with a different mode of action. Maximum of three (3) applications per year.	1
Use sufficient water for thorough coverage				



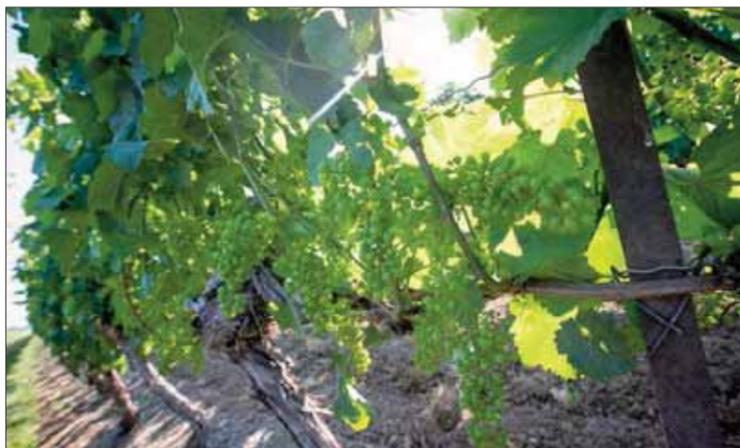
recommended that any products containing difenoconazole not be used in areas treated with this product during the previous season. Follow all other precautions and directions for use on the Quadris Top fungicide label carefully.

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, OMAFRA, minor use coordinator, Guelph, Ontario.

Parasol fungicide label expanded



The Pest Management Regulatory Agency (PMRA) recently announced the approval of an URMULE registration for Parasol fungicide (copper hydroxide) for management of several diseases of cranberries, grapes and hops in Canada. Parasol fungicide was already labeled for use on a number of crops in Canada for control / suppression of several diseases.

These minor use projects were sponsored by British Columbia as a result of minor use priorities established by growers and extension personnel.

The following is provided as an abbreviated, general outline only. Users should be making pest management decisions within a robust integrated

disease management program and should consult the complete label before using Parasol fungicide.

Parasol fungicide is toxic to birds, small wild mammals, aquatic organisms and non-target terrestrial plants. Do not contaminate off-target areas or aquatic habitats when spraying or when cleaning and rinsing spray equipment or containers.

Follow all precautions and detailed directions for use on the Parasol 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 www.hc-sc.gc.ca/cps-spc/pest/registrant-titulaire/tools-outils/label-etiq-eng.ph

Crop(s)	Target	Rate (kg/ha)	Applications	PHI (days)
Cranberries	Fruit rot complex (early rot (<i>Phyllosticta vaccinii</i>), end rot (<i>Godronia cassandrae</i> , <i>Fusicoccum putrefaciens</i>), viscid rot (<i>Phomopsis vaccinii</i>), botryosphaeria fruit rot and berry speckle (<i>Botryosphaeria vaccinii</i>), ripe rot (<i>Coleophoma empetri</i>), black rot (<i>Allantophomopsis lycopodina</i>), yellow rot (<i>Botrytis cinerea</i>), blotch rot (<i>Phyalospora vaccinii</i>), and bitter rot (<i>Colletotrichum gloeosporioides</i>) Rose bloom (<i>Exobasidium oxycocci</i>) Monilinia tip blight (<i>Monilinia oxycocci</i>), Twig blight (<i>Lophodermium oxycocci</i> , <i>L. hypophyllum</i>), Red leaf spot (<i>Exobasidium rostrupii</i>)	4.71	For fruit rot complex make first application in early bloom. One or two additional applications at 10 to 14 days intervals For rose bloom make up to three applications on a 10 to 14-day schedule as soon as symptoms are observed. For tip blight, red leaf spot apply as a delayed dormant spray when buds have started to swell but no are leaves showing (bud swell to early cabbagehead). Repeat at 10 to 14 day intervals through prebloom. For all diseases, do not make more than 3 applications per year	2
Grapes	Black rot (<i>Guignardia bidwellii</i>), Phomopsis rot (<i>Phomopsis viticola</i>), Powdery Mildew (<i>Uncinula necator</i> syn. <i>Erysiphe necator</i>), Downy Mildew (<i>Plasmopara viticola</i>)	2.24 – 6.72	Begin application at bud break and repeat at 3 day intervals through the season if needed. For all diseases, do not make more than 8 applications per year	2
Hops	Downy mildew (<i>Peronospora humuli</i>)	1.2	Apply as a fungicide crown treatment after pruning, but before training. After training, apply at 10 days interval if needed. Do not make more than 5 applications per year	14

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- How to design programs to help manage crop load
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