

**DROUGHT EFFECTS**

## Lessons learned on the relationship between water and soil



Let it rain. Even if it's manmade rain, pumped through overhead lines. At Schuyler Farms Limited, this droughty summer has been hard on orchards but fortunately, a spring-fed pond is on tap. Although rain was in the forecast, Brett Schuyler, Simcoe, Ontario, generously primed the pumps on August 15 to show an apple tailgate tour how the system works on 95 acres of Gala apples. Photos by Glenn Lawson.

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KAREN DAVIDSON

Doubling up, doubling down. That's been the case for Brett Schuyler and family whose apple acres have doubled in the last six years to 600.

Situated near Simcoe, Ontario, the farm is fortunate in having access to a spring-fed pond. What's more unusual for Ontario is that the farm has set up overhead pipes for irrigation, using the layout left behind from an original vegetable farm. They have made a difference during this droughty summer in nourishing newly planted orchards and in sizing apples for harvest.

"From my perspective, the Great Lakes area is in a sweet spot for water compared to California," says Schuyler.

Stewarding water also means adjusting water rates for the specific soil type. The Schuyler's have invested heavily in soil mapping and

precision technology to give just enough fertilizer, just enough water according to topography.

Fox sand has cropping limitations, whereas Brantford silt loam is more forgiving. Even apple rootstock is selected to suit certain soil types.

All of these considerations have affected orchard layout. Red Delicious apples, for instance, are slow-growing trees which do better on productive soil. On the other hand, McIntosh apples have done well on sandy soil while Honeycrisp varieties do better in a loamy soil.

The overhead watering system has been put into gear in recent years for overhead frost protection for 90 acres. The pipes are set up on 60 foot by 60 foot centers.

Just a decade ago, none of this planning would be part of apple orchard management. Investment in high-density orchards requires more

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**From my perspective, the Great Lakes area is in a sweet spot for water compared to California.**

~ Brett Schuyler

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management of all resources. Computer-generated soil mapping, better understanding of apple rootstocks and systems to meter water on an as-needed basis are integrated.

After such a water-thirsty summer in Ontario, parts of Quebec, Nova Scotia and Prince Edward Island, all growers will be evaluating how to prepare for the 2017 crop. Deanna Németh, horticulture sustainability specialist, Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) says "The best way to prepare following a dry season, is to take a recent soil sample for planning next year's nutrition

program." Because nutrient uptake may be less under extended dry soil conditions, there may be some nutrients in reserve for the following crop year. Plan to take a soil sample either post harvest 2016 or early spring 2017 to get a good estimate of the remaining nutrients for the 2017 cropping season.

Christoph Kessel, soil fertility specialist-horticulture, OMAFRA, describes how extended periods of very dry soil conditions can reduce nitrogen, phosphorus and potassium availability to plants.

CONTINUED ON PAGE 3

## AT PRESS TIME...

### Time extended for more consultation on marketing of Ontario processing vegetables

Ontario's agriculture minister has intervened in the Ontario Farm Products Marketing Commission (OFPMC) timetable to change the marketing of processing vegetables such as peas and sweet corn. The proposed changes were to remove the provisions for negotiating agencies and to replace the structure with an industry committee. Growers perceive this proposal as giving more power to processors.

Originally, the comment period was to end August 12, however Hon. Jeff Leal has written to OFPMC chair Geri Kamenz directing the commission to develop a plan for further engagement and consultation with interested parties and stakeholders.

"It is the expectation of the Government of Ontario that such amendments, if any, will be consistent with the needs of both producers and processors and will contribute to the Government of Ontario's broad policy objectives of supporting regulated marketing and increasing the number of agriculture-related jobs in Ontario."

Leal directed the commission to refrain from any changes until there is a more fulsome industry discussion.

The August 17 announcement

was welcome news for the \$100 million industry in the midst of harvest. Growers had been worried that sudden changes were underway in an industry that's enjoyed relative stability in recent years. Contract negotiations for 2017 crops such as onions and cucumbers usually begin in October.

Haldimand-Norfolk MPP Toby Barrett, opposition agriculture critic, has been active in lobbying for more consultation.

### Get hopping



The Great Ontario-Hopped Craft Beer Competition is accepting entries for the 2017 event at the Ontario Fruit and Vegetable Convention. To celebrate the fifth year of competition bringing together Ontario's finest brewers with Ontario's best hop growers, organizers are expanding to accept 18 teams – first come, first serve. This year's style will be a Belgian India Pale Ale.

Registration forms can be found at: <http://onhops.ca/registration-form/>

### Canada's potato acreage down almost 2%



According to Statistics Canada, potato farmers in Canada planted 342,602 acres (138,647 hectares) of potatoes in 2016. This is down 1.8 per cent from 2015, continuing the overall downward trend of the past 12 years.

This downward trend is mostly the result of the steady increase in the yield per acre which is averaging 300 cwt/acre.

Seeded area decreased in all provinces, except Quebec, Ontario and British Columbia.

The largest reductions were seen in New Brunswick and Manitoba where the planted acreage was down by 4.5 per cent and 4.2 per cent respectively.

Prince Edward Island accounted for 26 per cent of the potato acreage in Canada. Although it is the smallest province in Canada, Prince Edward Island is the largest potato producer in Canada.

Manitoba takes the second place, and accounts for 19 per cent of the potato acreage in 2016.

## NEWSMAKERS

The Ontario Potato Board has announced the retirement of general manager **Don Brubacher**, effective October 31. He's been with the board for 28 years, 18 years in the leadership role. His son **Kevin Brubacher** assumed the general manager's role August 1 after a decade as field manager and office services coordinator.



Don Brubacher

**Dennis Van Dyk** has been named vegetable specialist, Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) responsible for potatoes, carrots, parsnips, rutabagas, turnips, radish and horseradish. Previously, he was the University of Guelph's integrated pest management coordinator for the Muck Crops Research Station in Bradford, Ontario. He is close to finishing his Masters degree in plant agriculture under the tutelage of **Dr. Mary Ruth McDonald**.

The Canadian Agricultural Hall of Fame will induct one of horticulture's leaders this fall: the late **James Bartlett**. The agribusiness pioneer made tremendous gains for the Canadian horticultural industry through his leadership and vision. Born into the family business, N.M. Bartlett Inc., Bartlett led the Ontario-based company to become the only national horticulture crop protection distributor. James advocated for policies affecting importation of U.S. crop protection products. He helped create, and later chair, the precursor organization to CropLife Canada. And he championed the minor use registration of pesticides for small, specialty markets to keep Canadian horticultural growers competitive. James Bartlett was from Beamsville, Ontario and was nominated by Dow AgroSciences Canada Inc. The awards event will be held November 6 at the Royal Agricultural Winter Fair in Toronto.

The Canadian Produce Marketing Association hosted a town hall August 9 in picturesque Tracadie, Prince Edward Island to discuss industry issues with federal agriculture minister **Lawrence MacAulay**. A public Half Your Plate BBQ attracted media coverage with chef **Michael Smith**, Half Your Plate Culinary Ambassador.



Federal agriculture minister Lawrence MacAulay (L) and chef Michael Smith.

**Remi Van de Slyke** has been elected to the board of directors for the Ontario Fruit and Vegetable Growers' Association representing the ginseng industry. He's grown ginseng for 20 years and is currently vice-chair of the Ginseng Growers of Ontario. He replaces **Ken Van Torre** on the board.



Remi Van de Slyke

The Prince Edward Island Potato Board, Cavendish Farms and the PEI Department of Agriculture and Fisheries have announced an agronomy initiative to improve marketable yields of potatoes, sustainably. The working groups are chaired by **John Ramsay**, seed management; **Jonathan MacLennan**, soil improvement; and **Nathan Ching**, science and technology. Project leader is **Ryan Barrett**, PEI Potato Board.

Congrats to **Linda Delli Santi**, executive director of the British Columbia Greenhouse Growers for being chosen by the *Globe and Mail* as one of The Food 53. The five-part series celebrated the most influential people in Canadian food. She was lauded for her role in winning greenhouse sector tax relief from a carbon emission tax, arguing successfully that greenhouse growers need carbon dioxide -- created by burning natural gas -- to fertilize vegetable crops.

**Peter Chapman**, retail consultant and principal at GPS Business Solutions, has teamed up with **Gary Morton** to launch SKUfood.com. For more than 35 years, Morton has worked with agriculture and agrifood businesses. This on-line community is an opportunity for people to access free industry knowledge and to implement it in their own business.



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COVER STORY

# Lessons learned on the relationship between water and soil



Schuyler Farms Limited is most fortunate to have access to a spring-fed pond with a pump house. With plentiful moisture, these Gala apples will size nicely in time for September harvest.



CONTINUED FROM PAGE 1

### Nitrogen (N) availability may be depleted

For nitrogen, he says that low soil moisture decreases soil microbe activity. Microbes play

an important role in breaking down organic matter and converting organic nitrogen to inorganic nitrate nitrogen, a process called mineralization. In dry soils with low nitrogen mineralization, there could be less plant available nitrogen in the form of either ammonium (NH<sub>4</sub><sup>+</sup>-N) or nitrate (NO<sub>3</sub><sup>-</sup>-N)

nitrogen. In dry soils, the risk of NO<sub>3</sub>-N loss through leaching or denitrification is reduced. While this means there is more soil nitrogen available to crops, plant uptake can be reduced. When the rains return, Kessel says there can be a sudden increase in soil nitrogen. If this occurs late in the season, extra nitrogen may be detrimental for perennial crops going into dormancy.

### Phosphorus (P) may be reduced

Reduced soil microbial activity in soils with low moisture can reduce organic matter decomposition and the mineralization of organic P to inorganic P. Phosphorus moves from higher concentrations in the soil to lower concentrations in plant roots by diffusion. As soils become drier, less diffusion occurs. This is because the water film around

the soil particles becomes thinner, making diffusion to the plant root more difficult.

### Potassium (K) moves less

Decreased movement of K to the plant roots occurs in dry soil. As soil dries, clay minerals become dry and shrink, trapping K tightly between mineral layers. Once trapped, K is unavailable to plant roots for uptake. This K is released and plant-available again when the soil moisture increases.

Reduced K uptake during extended dry soil conditions can show up as low K levels in tissue samples or high K levels in a post-harvest soil sample. Taking soil samples in a dry year and comparing it to normal years can provide valuable information as to what to expect if future dry years occur again.

Beyond preparing for next year's crop, what management

practices help farmers adapt to long term impacts of extreme weather? Adaptation means making changes to balance the extremes in weather conditions; either too little rain, too much rain, or rain at the wrong time of year.

An example of management change is increasing soil organic matter. Soil organic matter can be increased from long-term addition of crop residues, organic amendments such as manures and composts or including cover crops. Increasing organic matter helps improve soil structure. Improved soil structure helps balance soil drainage in the wet years, and water holding capacity in the dry years, improving conditions for achieving consistent crop yields over the long term.

For a video interview with Brett Schuyler, go to [www.thegrower.org](http://www.thegrower.org).

## INTERNATIONAL

### HONG KONG

#### Asia Fruit Logistica welcomes 9,000 visitors



Exhibition space is sold out for the 10th anniversary of Asia Fruit Logistica, ready to open September 7-9. By the numbers, there are 644 exhibitors from 37 countries showcasing products and services. Twenty-three countries are hosting pavilions.

Marketers will be curious about the current status of China with its economic slowdown. Youchi Kuo, who leads Boston Consulting Group's China Center for Customer Insight will share her perspective. The consultancy published a seminal report in January 2016 called: The New China Playbook: Young, Affluent and E-savvy Consumers will Fuel Growth.

That report counsels produce companies to more strategically target income segments, product categories and retail channels. Rapid shifts in the nature of Chinese consumption are underway. The most potent trend is the rise of e-commerce, particularly among the young generation.

China's "slowdown" translates to annual growth of 6.5 per cent.

Source: [FreshPlaza.com](http://FreshPlaza.com)

### NORTH DAKOTA

#### Potato crops severely hail-damaged

Northeastern North Dakota took a direct hit from hail and rainfall on July 26, devastating the heart of potato country. Growers are reporting up to 80 per cent losses, especially in the Crystal area.

Andy Robinson, a potato extension agronomist at North Dakota State University, warned that pores on tubers open up to search for oxygen on wet fields, only to expose the plant to disease-causing bacteria. With late blight discoveries in western Manitoba, chances are higher that spores will be carried into the region.

This area of North Dakota grows chiefly fresh, seed and chip potatoes.

### PERU

#### New ag minister sets ambitious targets

Peru's new minister of agriculture and irrigation, Jose Manuel Hernandez, has set ambitious trade targets of US\$10 billion by 2021. Other goals include:

- Mitigate the sector's impacts caused by frequent climate phenomena (floods, frosts and droughts) with prevention programs. This budget is expected to double.
- Provide technology and technical training to farmers through Serviagro program — set to be ready within the first 100 days of Hernandez' administration.
- Rehabilitate at least 10,000 hectares of terraces through water programs.
- Ensure better access to credit among farmers by injecting US\$149.3 million of capital into Agrobanco

Source: [FreshPlaza.com](http://FreshPlaza.com)

### UNITED STATES

#### Apple category spurred by organics and new varieties

Analysis shows that varieties such as Honeycrisp, Ambrosia, Jazz, Envy, Kiku and Kanzi along with organics are propelling sales growth in the U.S. apple category. Steve Lutz, Columbia Marketing International, says that his company's organic production will increase by 60 per cent this year. Because organic apples command up to a 50 per cent retail premium over conventional varieties, this growth is profitable.

Lutz notes that high-colouring apples such as Honeycrisp are popular as well as Ambrosia which made the top 10 list last year.

Washington state's apple crop is expected to rebound by 20 per cent in volume this year. If the cherry season is a fore-runner, then expect high quality and good sizing of apples.

Source: [FreshPlaza.com](http://FreshPlaza.com)

## CROSS COUNTRY DIGEST

## BRITISH COLUMBIA

## UBC researchers examine the DNA of the world's wine regions

University of British Columbia (UBC) researchers are one step closer to identifying the biological personalities of the world's greatest wines. In a recent study, UBC researchers Dan Durall and Mansak (Ben) Tantikachornkiat developed a technique that combines a process to identify the full spectrum of DNA in yeast and bacteria samples with a technique that distinguishes between live and dead micro-organisms.

"Since only live micro-organisms are relevant in the various stages of fermentation as they relate to the senses, this study provides some of the

important tools that will be necessary to determine why different types of wine taste and smell as they do," says Durall, an associate professor of biology at UBC's Okanagan campus. "While more research needs to be conducted, these findings could also lead to the identification and elimination of micro-organisms that are responsible for spoilage."

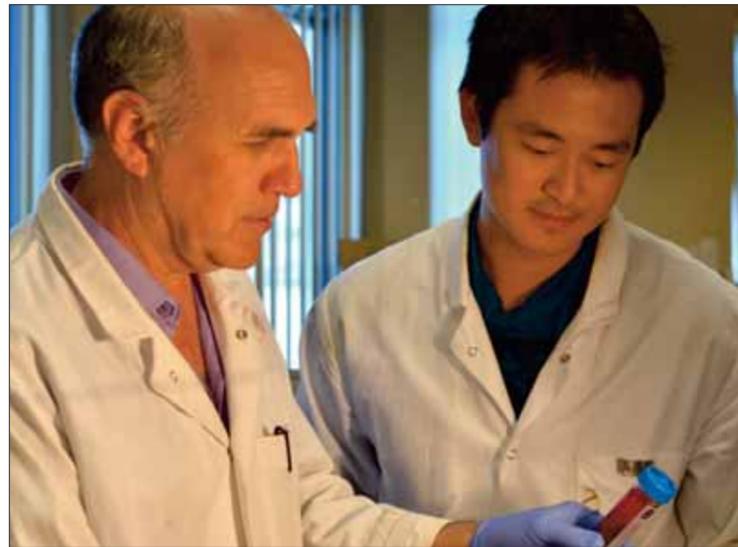
In undertaking the study, the pair used a number of different kinds of yeast and bacteria specimens, including those typically found in wine fermentations.

Key in the development of the new scientific technique

was the use of a light-sensitive dye, propidium monoazide, which binds to dead DNA and prevents it from being detected. This allows scientists to identify and focus on the more relevant aspects of a test sample.

"This technique allows us to quickly and accurately monitor in one experiment what previously could have taken multiple experiments and months of trial and error," says Tantikachornkiat. "This will inevitably make research in this area faster, cheaper and more efficient."

"The next stages of research will focus this technique on different types of wine-making



UBC's Dan Durall (left) and Ben Tantikachornkiat are looking at how micro-organisms may affect the taste of wine.

methods to see how they change micro-organisms that affect the final wine product."

Durall and Tantikachornkiat's research was

recently published in the *International Journal of Food Microbiology*.

Source: UBC news release

## ALBERTA

## Thomas Fresh debuts new packaging

Following the rebrand unveiled earlier this year at the 2016 CPMA Convention, Thomas Fresh has been working hard to take the next important step in refreshing their visual identity in the hearts and minds of produce consumers.

As potatoes make up a dominant percentage of Thomas Fresh's total distribution, potato bags were among the first packages to be redesigned. Canadian-sourced potatoes with new Thomas Fresh branding will be arriving in stores as early as September.

"In addition to rethinking the look and feel of our packaging, we really went to work determining what the

grocery consumer is looking for in terms of potato pack sizes and varieties," says Erin Power, director of marketing, Thomas Fresh, based in Calgary, Alberta. "We're emphasizing smaller pack sizes – such as 1.5lb and 3lb bags – in addition to the traditional 5lb and 10lb bags."

According to CEO Roy Hinchey, one of the big wins is the chance to bring Canadian white potatoes into the foreground. "We have a lot of grower partners across the country working hard to deliver quality whites to our warehouse, and we felt it was not only an opportunity, but in some ways a duty to bring these forward to the stores in a meaningful way

that will attract consumers."

"We're also offering a great variety of organic and conventional product, in all colours. There's a lot of real estate in the potato aisle of the produce department, and we felt we had a chance to offer a more consumer-focused selection," adds Hinchey.

The new potato bags will use Thomas Fresh's existing pillow top packaging technology. Welded poly bags have enough printable real estate on the front of the bag for eye-catching artwork that also helps block light to preserve the quality of the potatoes. The bag's back will remain mostly unprinted so consumers can view every potato in the pack -- a request



that has come directly from consumers, who want the opportunity to see exactly what they're buying. The lay-flat, rectangular shape of the pillow top pack also enables easier,

tidier merchandising on produce aisle shelves.

Source: Thomas Fresh news release

## PRINCE EDWARD ISLAND

## Potato industry partners launch enhanced agronomy initiative

The Prince Edward Island Potato Board, Cavendish Farms, and the PEI Department of Agriculture and Fisheries have launched an enhanced agronomy initiative. The goal is to improve marketable yields of processing potatoes and profitability of PEI potato growers while also improving environmental sustainability.

To meet these goals, three working groups have been established, with membership of both farmers and industry resource personnel. These working groups will be looking at priorities in the key areas of soil health, seed management, and science and technology and will work to establish both research and extension projects

that address these priorities.

Coordinating these efforts is project lead Ryan Barrett who holds a Bachelor of Science degree from the Dalhousie Faculty of Agriculture and a Master of Science degree from the University of Guelph. Ryan returned to Prince Edward Island and began working with the PEI Potato Board in June 2012. In addition to this new role, Barrett retains responsibilities as research coordinator for the Prince Edward Island Potato Board.

This collaborative program will be jointly funded by Cavendish processing potato growers, Cavendish Farms, and the Prince Edward Island Department of Agriculture and

Fisheries. The growers are contributing via a special check-off on their processing contracts. These partners, together with representatives from Agriculture & Agri-Food Canada and the Dalhousie Faculty of Agriculture, are represented on a steering committee.

Work began in early May 2016, and Prince Edward Island processing potato growers were consulted through the spring and early summer to solicit their ideas and needs in agronomy and research extension. Some research and extension projects are already underway, while others will be developed later this year.

Source: PEI Potato Board news release



CROSS COUNTRY DIGEST

BRITISH COLUMBIA

# Good sorting mitigates effects of rain on cherries

Hopes for a big cherry crop in British Columbia were downsized when summer showers delayed harvesting and caused fruit cracking. However, sorting technology has helped to deal with quality defects.

“We have experienced cracking losses averaging 12 to 17 per cent,” said Julie McLachlan with Jealous Fruits. “Luckily, between our upgraded defect sorter and more staff on the lines, we have been able to produce a very clean pack.”

While rain has delayed harvest a few days this year,

the cooler weather has resulted in larger fruit size and very firm fruit. Growers have aggressively used helicopters and ground blowers to deal with the rain, and the extra water has contributed to large cherries.

The season ended in mid-August. Though production in British Columbia is only a fraction of that in Washington and Oregon, acreage is growing to meet rising demand for cherries around the world – though expansion is still limited by land use from other crops and industries.

“We are adding acreage to meet burgeoning demand in both Asia and North America,” said McLachlan. “Presently, 4,500 acres are planted in BC, and this may slowly grow to 6,000 acres over the next several years.”



Source: Jealous Fruits news release

ONTARIO

# Agriculture mourns the loss of David Sparling

A thought leader for agriculture, David Sparling, 64, died of brain cancer on July 31, 2016. Most recently, he was the Chair of Agri-Food Innovation and Regulation for the University of Western Ontario’s Ivey Business School. Previously, he was a professor and associate dean at the University of Guelph. These roles brought him into contact with a wide network of students, farmers, industry and government leaders.

Sparling was regularly sought as a speaker and for his counsel to agribusiness. For example, he co-authored a report on food waste, documenting the losses along the value chain. In an interview with the *London Free Press* on July 9, 2014, he said, “In a land in which we have so much food and a land of so much hunger, it still doesn’t make sense that so much food goes to landfill. You’re never food secure, if at the end of the day, you’re throwing out one-third of your food.”

In another interview with the *London Free Press* on November 4, 2015, he commented on the federal election: “When different political parties talk about

agriculture and they talk about food, pretty much everyone agrees that they are bedrock industries. I think the new regime in Ottawa will continue to invest in these industries and in exports.”

His optimistic views about the resilience of agriculture were on full display in a podcast interview for Farm Credit Canada earlier this year. In a segment titled “Six years that changed agriculture,” he analysed the global shifts from 2005 to 2011 – everything from economic recession to biofuel mandates that soaked up huge quantities of corn.

“One of the interesting things is that people started to recognize that agriculture is sheltered to some extent from global forces,” said Sparling. “Agriculture is attractive to investors and to governments because it’s a stable industry. It’s a very nice place to be – from an environmental perspective, a health perspective. It’s unbelievably exciting to be in the agricultural space right now.”

Ironically, at the end of the podcast, there was



another segment: What a funeral can teach us about legacy. “History does not remember or celebrate those who champion the status quo.”

For the full podcast, go to: [www.fcc-fac.ca/en/ag-knowledge/fcc-edge/fcc-edge-15-david-sparling.html](http://www.fcc-fac.ca/en/ag-knowledge/fcc-edge/fcc-edge-15-david-sparling.html)

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ONTARIO FRUIT AND VEGETABLE GROWERS' ASSOCIATION ANNUAL SUMMER TOUR

# Beattie's Farm Distillery

Being fifth-generation potato farmers doesn't make it any easier to start a value-added business. Ken and Liz Beattie have spent more than two years planning the construction of an on-farm distillery and marketing program near Alliston, Ontario. The early success of their farm-crafted potato vodka is measured in the fact that it's already in 300 stores of the Liquor Control Board of Ontario (LCBO).

"We currently have a 750ml bottle in production but are now looking to a 1.14ml bottle," says Liz Beattie. "The goal is to be across Canada before we explore export markets."

True to their rural roots, 50 cents of every bottle sold will

be donated to local charities.

The distilling process is currently offsite but will be brought home soon with the arrival of a German-made, 5,000-litre still pot. At capacity, it can churn out 250 to 300 cases per day. One of the benefits of choosing to "cook" and ferment potatoes is that, unlike other alcohols, aging is not required.

"We are in the process of making a potato whiskey that could be marketed by Christmas," says Beattie.

With in-store demonstrations underway from Oakville to Ottawa, the brand is set to take off. Cheers to farm-crafted vodka.



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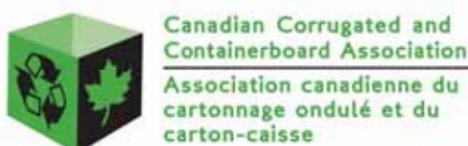
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## CROP PROTECTION

## Bulb and stem nematode infestations crimp garlic expansion



Garlic Growers Association of Ontario held a field day at the Muck Crops Research Station, Bradford, Ontario.

Photo left: Abamectin (Agri-Mek SC) treatment stands next to fluopyram (Luna Privilege/Velum Prime).

KAREN DAVIDSON

Demand for locally-grown garlic edged retail prices into the \$7.99 per pound territory in early August.

“Garlic is the poster-child of

locally-grown produce,” says Michael Celetti, Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) plant pathologist for horticulture crops. “The size of bulbs are larger than foreign products and the quality is superior. That’s

why garlic will be sold out in festivals and local markets by early fall.”

Even with the promise of profitable returns, growers are stymied by a nasty pest: bulb and stem nematode. These microscopic eelworms cause the bulbs to rot and become unmarketable. Above ground, the plant appears wilted and stunted in its growth habit.

At a Garlic Growers of Ontario field day last June, growers eagerly reviewed a trial comparing different methods of treating bulbs before they are sown for the next crop. Mary Ruth McDonald, University of Guelph research program director, explained the trial at the Muck Crops Research Station Bradford, Ontario. Dip, drench and foliar sprays were

compared (see sidebar).

While results are preliminary, the active ingredient fluopyram showed superior results when it was used in water to soak garlic bulbs for four hours.

“These are promising results but the product is not registered for this use,” explains Celetti. Discussions are active with the Pest Management Regulatory Agency in terms of how handling protocols could be modified to protect worker safety and thus lead to a registration.

The abamectin (Agri-Mek emulsifiable concentrate (EC)) also works well, better than the product in soluble concentrate (SC) form in 2015 but performed similarly in the 2016 trial. Neither drench products nor foliar sprays controlled or suppressed the pest. The final results will be presented at grower meetings throughout the fall and winter.

While this research continues, growers are in a tough spot. They shouldn’t plant clean seed in infected soil. They shouldn’t

plant infested bulbs in clean soil. Nematodes are easily spread when infested seed is kept for replanting next year. For some growers who oversold their garlic at high prices last year and had to find sources of new seed, they were discouraged to learn that they brought nematode infection to their farm.

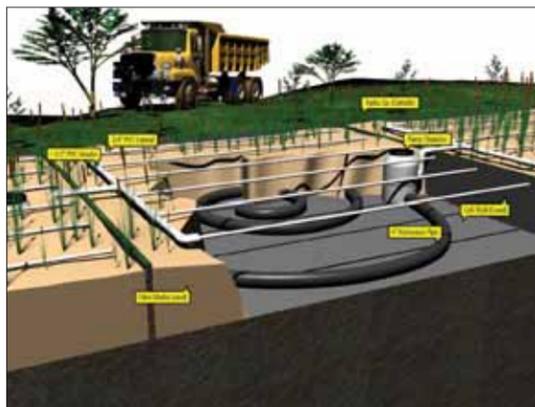
In the near-term future, Agriculture and Agri-Food Canada researchers based in Quebec are working to identify different races of nematodes and their ranges in crops. The California Garlic and Onion Research Advisory Board has provided funding to the University of Guelph to continue nematode research. OMAFRA, in partnership with the University of Guelph, is funding a three-year trial.

If the scourge of bulb and stem nematode could be solved, garlic is one crop that could be grown widely, and contribute to the agricultural economy in profitable ways.

### The ‘AQUA Wetland System’ “A new breed of constructed wetland”

AQUA Treatment Technologies Inc. designs and installs the ‘AQUA Wetland System’ (AWS) for tertiary treatment of many types of waste water including sanitary sewage, landfill leachate, dairy farm & abattoir wastewater, greenhouse irrigation leachate water & mushroom farm leachate water (i.e. manure pile leachate) and high strength winery washwater.

The ‘AQUA Wetland System’ is operated out of doors and can achieve year-round tertiary treatment of wastewater. This sub-surface, vertical flow constructed wetland consists of sand & gravel beds planted with moisture tolerant plant species. Water is pumped vertically from cell to cell. There is no open or standing water. Treatment occurs through physical filtration & biological degradation. Plants shade & insulate the cells, cycling nutrients while preventing algae growth. There is no production of sludge.



The AWS has been approved for use by the Ontario Ministry of Environment through over 40 Environmental Compliance Approvals. Recently the Region of Niagara began approving the AWS for treatment of ‘small flow’ winery washwater i.e. < 10,000 liters per day. Other agencies who have issued approvals include Health Canada, USEPA and OMAFRA. Recent projects include:

- 1) treatment & re-use of greenhouse irrigation leach water at greenhouses in Niagara & Haldimand
- 2) treatment of winery wastewater at Greenlane Estates Winery & numerous other in Niagara
- 3) treatment of landfill leachate at sites in Pembroke, Niagara and Alabama

**For additional information please Contact Lloyd Rozema at: cell. 905-327-4571  
email. lrozema@aqua-tt.com**



### Treatment regimes

#### Dip treatments – 300 L/ha H<sub>2</sub>O

1. **Abamectin** (Agri-Mek EC) for 4 hours – 3.76 mL/L H<sub>2</sub>O
2. **Abamectin** (Agri-Mek SC) for 4 hours – 0.858 mL/L H<sub>2</sub>O
3. **Abamectin** (Agri-Mek SC) double rate – 1.716 mL/L H<sub>2</sub>O
4. **Fluopyram** (Velum Prime) for 4 hours – 500 mL/ha = 1.66 mL/L H<sub>2</sub>O
5. **Fluensulfone** (Nimitz) for 4 hours – 6 L/ha = 20 mL/L H<sub>2</sub>O

#### Drench treatments – use 1000 L/ha H<sub>2</sub>O spray volume

6. **Fluensulfone** (Nimitz EC) at planting and in spring – 6 mL/ha = 6 mL/L H<sub>2</sub>O
7. **Fluensulfone** (Nimitz GR) at 19.2 kg/ha at planting and Nimitz EC in spring
8. **Fluopyram** (Velum Prime) drench at planting and spring – 500 mL/L = 0.5 mL/L H<sub>2</sub>O

Foliar Spray - starting when foliage is 8 inches high and applied every two weeks:

9. **Spirotetramat** (Movento) at 500 L/ha + Hasten 0.2% v/v – 3 sprays

- trial planted 9 October, 3/4" irrigation applied immediately after planting
- 25 May, 2016: number of emerged plants per replicate counted
- 30 May, 2016: heights of 10 plants per replicate measured

ONTARIO FRUIT AND VEGETABLE GROWERS' ASSOCIATION

Board briefs

Here is a summary of the board meeting held July 21.

**Charles Stevens – Crop Protection**

The Canadian Association of Professional Apiculturists (beekeepers) released its report on the status of bee health in Canada. The survey was well received by beekeepers, with 61 per cent participation from across the country. Nationally beekeepers claim that they lost about 16.8 per cent of their hives, which is the lowest since 2006-07. There was an increase in colonies in Canada – 22.4 per cent. Compared to the U.S., Canada is one of the few countries where farmed bees are increasing in numbers. Beekeepers ranked the highest-ranking losses due to the following factors: poor queens, varroa mites, weak colonies, and poor weather conditions. Pesticides were not mentioned.

There are two re-evaluations taking place: Captan and Rovral (which affects ginseng growers and vegetable seed treatment). OFVGA has sent comments to the Pest Management Regulatory Agency (PMRA). Although Captan did not get a lot of commodity responses from across Canada, apple growers and associations were the most active in their responses.

**Harold Schooley - Research**

The Ontario Agri-Food Technologies steering committee is now reviewing consultants' reports regarding precision agri-food. The study examined Ontario's needs and opportunities and compared them to what is being done elsewhere in the world. It also determined what would be our needs for information technology, infrastructure and security for a centralized, public, precision agri-food system.

Phase two of this project is now underway to put such a centralized system in place.

York University researchers are studying the status of pollination needs in certain areas of Ontario. After meeting with the Post Doctoral Fellow heading this study, I also directed her to confer with other horticultural producers. It will be interesting to see the viewpoint reported in this study which is funded by the Weston Foundation.

Lavender is one of the crops grown at our farm, attracting bees in a big way. These are largely feral bees as several different species can be seen (although I am probably drawing some honey bees away from my neighbour's cucumber field). This broad diversity has been confirmed by an

OMAFRA/U of Guelph team also studying bee diversity.

Bee numbers in lavender fields are tremendous and the public that visits us are amazed to see the bees thriving in this habitat. It is pleasing to see the size and health of feral bee populations. From what is reported by commercial beekeepers, bee populations are at strength this season.

**Brian Gilroy - Property**

The OFVGA's comments for the Great Lakes Nearshore Framework have been submitted thanks to the efforts of the committee.

The Royal Agricultural Winter Fair's Horticulture Committee has been struggling to attract more competitors to participate in its annual competition. The validity of it being called a competition with so few entries in multiple categories is the main issue. In the future, the horticulture exhibit regrettably might be featured as a display only.

The Bird Damage Mitigation work continues with Brock University. The kestrel nesting boxes in the study have seen much greater success this year, with 21 young kestrels that have fledged the nesting boxes. The Invisi-Shield units have been deployed to a sour cherry orchard and a blueberry patch, and their effectiveness will be assessed soon. One observation that has been made to date is that birds, and robins in particular, are very adaptable.

The Farm and Food Care Ontario file has been busy with an overall strategic planning process, beginning soon. The organization's new executive director, Tracy Hussey has been a welcome addition to the team. I appreciate OFVGA's support in my new role as chair of Farm and Food Care Ontario.

The Municipal Property Assessment Corporation (MPAC) is now using the new updated property and farm building value assessments. It is everyone's right to challenge their assessment should they view it as unfair. I am hopeful that a methodology manual will be ready as soon as this fall.

There is a committee examining the issue of food waste, and a University of Guelph PhD student is focusing her research in this area. She is looking for people to interview from across the supply chain.

**Mark Wales – Safety Nets**

There was discussion about successor model programs for SDRMs.

**Adrian Huisman - Canadian Horticultural Council (CHC)**



Photo by Glenn Lowson

There have been some significant staff changes at CHC. Rebecca Lee is the new executive director. Julie Paillat,

manager, greenhouse, is filling a new role. The positions of manager, communications and manager, policy development

and research, are vacant.

A two-percent membership fee increase has been approved for 2017.



**Return your unwanted or obsolete pesticides and livestock medications**

Farmers: safely dispose of your unwanted agricultural pesticides and livestock/equine medications from **September 20-30, 2016** at one of the following locations, for no charge.

Tuesday, September 20		Wednesday, September 21		Thursday, September 22	
Brodhagen	Hoegy's Farm Supply	Brussels	Brussels Agromart	Beamsville	NM Bartlett
Guelph	Woodrill Farms	Ailsa Craig	Hensall District Co-op	Forest	Lakeside Grain & Feed Ltd
Glencoe	Parrish & Heimbecker	Aylmer	Max Underhill's Farm Supply	Kitchener	GROWMARK Inc
Monday, September 26		Tuesday, September 27		Wednesday, September 28	
Bothwell	Hagerty Creek	Tupperville	Agris Co-op	Paincourt	South West Ag Partners
Alliston	Alliance Agri-Turf	Wellandport	Clark AgriService	Princeton	Cargill
Tara	Sprucedale Agromart	Bradford	Bradford Co-op	Oakwood	Oakwood Ag Centre
New Hamburg	Good Crop Services	Walkerton	Huron Bay Co-op	Harriston	Cargill
Lancaster	Munro's Agromart	Alfred	Synagri	Casselton	Agro Culture 2001
Thursday, September 29		September 27-29		Friday, September 30	
Blenheim	Thompsons	Verner	Verner Ag Centre	Courtland	Cargill
Bolton	Alliance Agri-Turf	Gore Bay	Northland Agromart	Orangeville	Holmes Agro
Trenton	TCO Agromart	Pembroke	M&R Feeds and Farm Supply	Picton	County Farm Centre
Dundalk	Huron Bay Co-op	Arnprior	M&R Feeds and Farm Supply	Leamington	Agris Co-op
Richmond	Synagri	Thornloe	Temiskaming Ag Centre	Chesterville	Synagri
		Thunder Bay	Thunder Bay Co-op		

Collection sites will only be accepting targeted products from 9 a.m. until 4 p.m. at each location on the date indicated.

Program supported by:



For more information, please call CleanFARMS at 877-622-4460 or visit [www.cleanfarms.ca](http://www.cleanfarms.ca)

## Red tape, open for business



**JAN VANDERHOUT**  
VICE-CHAIR, OFVGA

Farm organizations and businesses in Ontario are once again being asked to respond to a consultative process on red tape reduction. Red tape reduction always has been and continues to be a great idea. I am glad that the provincial government is striving to reduce the administrative burden but I really need to ask: how is that

working out for them? I heard last week from a former civil servant that red tape reduction or “open for business” as it is also called is not a novel idea and in fact more than 20 years ago this was in the works. So are we almost there? How do we even measure this? It seems to me there is more regulation than ever.

I have yet to speak to a business person who is satisfied with the amount of red tape to be dealt with. Understandably there is a lot going on these days with environmental concerns, zoning issues, maximum building heights in your neighborhood, NIMBYism and so on. It is only natural that government must step in and keep people in line. If you can think of specific regulations that add undue administrative burden then I hope you will answer the call to government’s consultative process. You can

do that by going to their website at [www.Ontario.ca/redtapechallenge](http://www.Ontario.ca/redtapechallenge).

Is this really going to fix the problem? It might help but will it really lessen the administrative burden of running your farm business? We can hope but I believe there is a more fundamental issue here: the role of the administrators. I am not going to center out any ministry or municipality or other branch of government because what we are talking about is systemic through all branches and levels of bureaucracy. I believe we need to look at the “customer service representatives” that we deal with in all these different government offices and the way they deal with their clients.

My personal experience has been too often one of frustration due to the way government employees handle our cases. I feel they should be there to

help us navigate the regulations so we can get back to our regular business. The sense is that they feel they are there to enforce and uphold some regulation or more likely all regulation whether it needs to apply or not and to dig until they find every regulation that might apply and let us sort it out. They think they are there to drop the heavy hand of their ministry on our operations and make us fill in all of the forms and applications and do all the required studies no matter how ridiculous and inapplicable.

The big question is what is to be done? I do not have a silver bullet for this but I do have a couple of ideas that might help. If we have frank dialogues with our MPPs, town counsellors, mayors and managers perhaps we can effect a change in the role of “customer service representatives” in the different levels of government.

We can respond to the red tape challenge with the suggestion of helping civil servants remember that they are working for us and helping business achieve their goals. We can be cooperative when dealing with government employees in order to help them help us.

As a bit of a disclaimer I have to say that not all government interactions are challenging and some “customer service representatives” are a pleasure to work with especially when we identify some of our shared goals or how we can help each other achieve our respective goals. After all, that is the point.

*Jan Vanderhout is a greenhouse vegetable grower and vice-chair of the Ontario Fruit and Vegetable Growers’ Association.*

### PERSPECTIVE

## CAPA report tells good news story for Canadian honey bees

It was a successful winter for honey bees across Canada according to the latest report from the Canadian Association of Professional Apiculturists (CAPA), with overwinter losses nationally just below 17 per cent. Couple this with the fact that honey bee numbers in Canada are at an all-time high and there’s a great story to tell around bee health, though you wouldn’t know it from the alarmist claims and charged rhetoric being thrown around by certain groups.

In Ontario specifically, overwintering losses this year were just below 18 per cent. This is a significant drop from last year where losses were just under 40 per cent. As we’ve seen in recent years, and indeed through the course of history, overwintering losses fluctuate significantly from year to year based on various factors, chief among them, weather.

The last five years in Ontario serve as a perfect case study. The 2011/12 winter was particularly mild in Ontario and overwintering losses that year were around 12 per cent. Losses climbed up to the 30 and 50 per cent range in subsequent years when the winters were particularly harsh. And this year

the numbers dropped again to below 20 per cent with a moderate winter, highlighting that a combination of factors including weather, nutrition and colony strength all factor into overwintering losses.

These fluctuations all happened while farmers’ use of neonicotinoid-treated seeds remained relatively consistent. So while certain politically motivated groups point to neonicotinoids as the primary cause of bee health issues in Ontario, the facts simply don’t support it.

CAPA specifically asked beekeepers across the country what they thought the primary causes of overwintering losses were this year. They identified poor queens, varroa mites, weak colonies and weather as the top four issues. Pesticides in general, and neonicotinoids specifically, did not make the list.

There’s clearly a disconnect between the beekeepers themselves and some of the provincial beekeeping organizations that claim to represent their interests. In recent years the Ontario Beekeeping Association (OBA) has spent the bulk of its time lobbying to have neonicotinoids banned. Their members would

be much better served by having them focus on the real issues of concern to beekeepers in the province.

Unfortunately, the Ontario government bowed to pressure from activist groups and introduced regulations to severely limit farmers’ use of neonic-treated seeds. The government’s stated goal with these regulations was to get overwintering losses down to 15 per cent. The numbers in Ontario this year are close to that level even before the new regulations took effect. The question then is why are farmers being handicapped with these restrictions when there is no apparent impact on honey bee overwintering success?

Ontario’s regulations are burdensome and costly for farmers. They serve only to remove a useful tool from the toolbox that has allowed growers to farm in increasingly more sustainable ways. Forcing farmers to revert to using older production methods is not good for them, it’s not good for the environment, and it’s not good for Ontarians and Canadians as a whole.

I hope that these latest overwintering loss numbers and the expert commentary from



Photo by Denis Cahill

Canada’s preeminent bee experts lead both the Ontario government and OBA to recognize the error in their ways. And I hope they serve as a cautionary tale for others, like Quebec, who are considering implementing similar restrictions that will hurt the agriculture industry and do little to help protect bees.

Many stakeholders are working productively together to address the primary

challenges identified by beekeepers through venues such as the Bee Health Roundtable. Let’s drop the finger pointing and politics and work together towards meaningful solutions to ensure the continued success of this vital industry.

*Ted Menzies is president and CEO, CropLife Canada.*

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THE GROWER

PERSPECTIVE



# Farm groups try cooperative approach for public support



OWEN ROBERTS  
U OF GUELPH

to trust them. And decision makers need to know the public approves of what's happening on the farm.

But there's a disconnect. Farmers feel the goalposts keep getting moved. They address one public concern, or at least think they do, and up pops another. And many of these concerns cross commodities, particularly when it comes to the environment, one of the province's biggest targets.

Acting independently has not achieved the kind of results farmers need going forward. Neither have legal approaches, such as the Grain Farmers of Ontario's attempts to block the province's limitations on neonicotinoids, and going way back, CropLife Canada's failed efforts to successfully stop municipal legislation in Ontario against cosmetic pesticides.

Against a huge and more sophisticated PR machine, and with little public sympathy on their sides, neither group could convince the public to let them battle bugs and weeds with

products and in ways that federal authorities had deemed sound.

Now, it's time for a different approach. Big commodity groups – OFVGA, Ontario Processing Vegetable Growers, Ontario Greenhouse Vegetable Growers, Grain Farmers of Ontario, Ontario Pork and Beef Farmers of Ontario – have come together with a program called Grow Ontario Together, to try a kinder and gentler way of generating public support.

They hope leadership, education and conversation will do what tough talk and litigation could not – namely, preserve the brand quality of Ontario agriculture, and stave off legislation that ties farmers' hands.

They're calling it a "comprehensive engagement strategy" and it could result in some interesting pairings. The group quotes research showing the public trusts policies or programs that have support from organizations representing opposing viewpoints. So on

some issues, you could see activists and farmers standing hand in hand.

The first issue the group wants to address is overusing phosphorus, the nutrient blamed for algae blooms in the Great Lakes and elsewhere.

This was a huge issue years ago. When the connection between phosphorus loading and certain farm practices were realized, farm groups, led by pork producers and the University of Guelph, conducted a great deal of research and rallied together to help lessen phosphorus loading.

So, farmers are not starting from scratch. They can point to some successes they've had, and drive towards their goal of what Grow Ontario Together spokesperson Amy Cronin, chair of Ontario Pork, describes as "working with municipalities, environmental groups, citizens and bordering U.S. states to make sure we are all taking action. We recognize and acknowledge there is a problem and being proactive is one of

the best ways to show the public we want to be part of the solution."

Grow Ontario Together's four-point plan involves a research-based approach, recruiting arm's-length expertise such as that found at the University of Guelph to arrive at mutually agreed upon science and data, and creating for provincial consideration what Cronin calls "a solid plan that works for everyone." That will be one measure of victory, as will phosphorus reduction itself.

Coming together from such diverse and previously divisive perspectives is indeed a different approach to leadership. It's a measure of willingness and patience, especially given the trying summer many farmers have experienced with the likes of low rainfall and high energy prices.

Now, on with the quiet revolution.

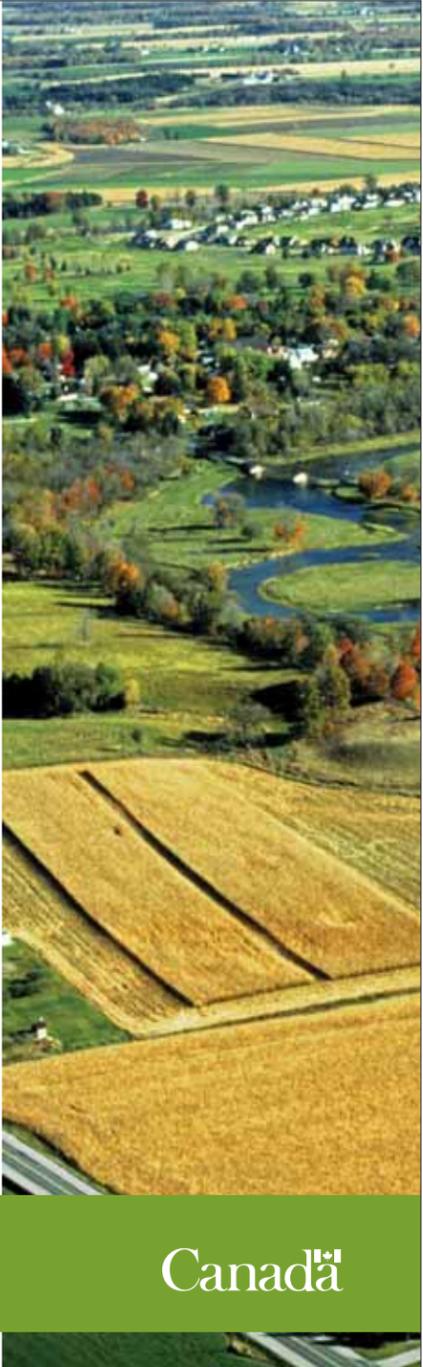
Some of Ontario's leading commodity groups, including the Ontario Fruit and Vegetable Growers' Association (OFVGA), are hoping sugar goes farther than vinegar in the increasingly important court of public opinion.

Over the past year or so, farmers have been frustrated – and let it show – over the challenges of connecting with consumers and decision makers. Producers certainly need the end users of their commodities



## Growing Forward 2

A federal-provincial-territorial initiative



# Get Started

## Thinking about farm improvements for 2017?

Apply NOW for *Growing Forward 2 (GF2)* funding assistance by following **3 easy steps**:

Consult the Producer Program Guide available at [ontariosoilcrop.org](http://ontariosoilcrop.org) to learn about opportunities and requirements under the program.

Questions? Attend a workshop\* and speak to a Regional Program Lead or Workshop Leader. Register at [ontariosoilcrop.org](http://ontariosoilcrop.org).

\*Some OSCIA Workshops may be a requirement for *Growing Forward 2* funding assistance allocations.

You have from October 14 to November 3, 2016 to submit an application for the next intake for funding assistance.

- 1

**ENROL YOUR FARM BUSINESS**
- 2

**ATTEND A WORKSHOP**
- 3

**APPLY FOR FUNDING ASSISTANCE**







## Temporary water permits available for Ontario irrigators

BRUCE KELLY and MORGAN ELLIS

The extremely dry growing season has been hitting Ontario farmers hard, particularly in the Niagara region. The effects of the intense heat combined with little to no rain has resulted in the Ontario Tender Fruit Growers and the Ontario Fresh Grape Growers' Marketing Board asking the government to streamline Permit to Take Water (PTTW) procedures.

sent a letter to the Ontario Ministry of Environment and Climate Change (MOECC). The communication urged the government to collaborate with municipalities and growers to develop short-term and longer-term water infrastructure solutions.

The MOECC, supported by OMAFRA, heard the pleas of Ontario farmers and agreed to a streamlined approval process for PTTW. The streamlining of the approvals process will be done during the current growing

collaboratively with the agriculture community to find solutions to current and future challenges."

"Every water taking source is unique, and potential environmental impacts of the taking need to be evaluated," says Sasha Novakovic, water specialist at the Ontario Fruit and Vegetable Growers' Association. "Growers are encouraged to contact their regional MOECC office or the OFVGA for additional information and support."

Over the long-term, the government is committed to working with grower organizations in developing longer-term drought management solutions and infrastructure projects, particularly in the Niagara region, for tender fruit and fresh grape growers. Phil Tregunno, chair of the Ontario Tender Fruit Growers commented, "We look forward to working with the province and municipalities to implement water access strategies that will ensure a

we need the Ontario government and its relevant ministries to respond to the immediate needs of the growers with water taking strategies."

### Resources:

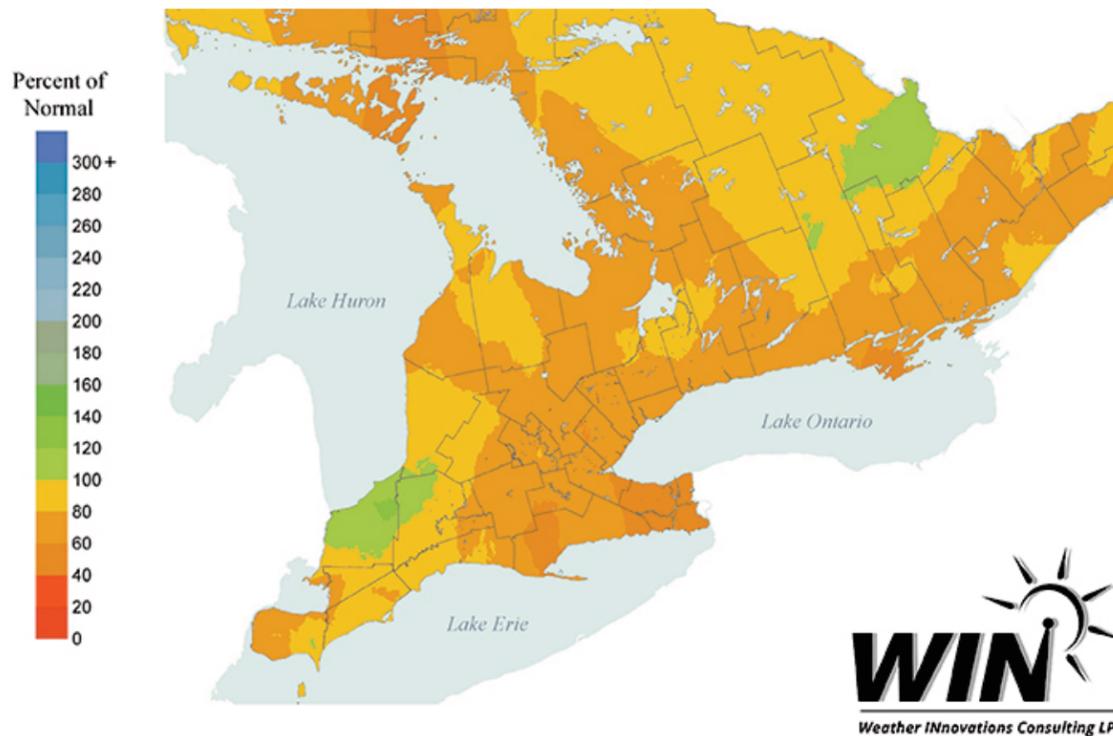
- Ontario Ministry of Agriculture, Food and Rural Affairs – Dry Conditions and Low Water Response
- Ontario Ministry of Agriculture, Food and Rural Affairs – Irrigation
- Ontario Ministry of



Environment and Climate Change – Permits to Take Water

*Bruce Kelly and Morgan Ellis, Farm & Food Care Ontario.*

### Map of drought in Southern Ontario for July 2016



With the combination of low moisture levels leading up to the growing season and minimal rainfall through the season, the industry is scrambling to maintain its crops within the current water allotment allowance. Harvesting local, nutritious fruits of marketable size is a commitment growers make to the public. Now, Ontario farmers are turning to irrigation to maintain crop quality.

Matthias Oppenlaender, chair of Grape Growers of Ontario, noted, "Vineyards can sustain a lot of dry, hot weather. However, to produce economically viable yields, water is essential. This continuous lack of moisture has put tremendous strain on new grape plantings and existing vineyards."

In early July, the Ontario Tender Fruit Growers and the Ontario Fresh Grape Growers' Marketing Board collaboratively

season and on a temporary and short-term basis. Requests by growers will be dealt with on a case-by-case basis and may include takings from the Great Lakes and connecting channels, takings from dugout ponds and takings from neighbouring permitted sources such as ponds.

Patrick Spezowka, Supervisor, Program Support Services, MOECC in the South West Region, said, "the Ministry of the Environment and Climate Change recognizes the unique and difficult situation faced by the Ontario Tender Fruit Growers and the Ontario Fresh Grape Growers. The streamlined urgent permitting process provides farmers with a solution to their immediate water taking needs. This process is available on a temporary and short-term basis during the current growing season to help maintain crop quality. We'll continue to work

sustainable supply of local fruit for consumers."

Rebecca Shortt, a water quantity engineer at OMAFRA, points to the importance of water conservation efforts as a whole, stating, "Efficient irrigation practices are always important but even more so during dry periods. Some practices which may help stretch irrigation to more crops include ensuring the irrigation system is applying the amount of water expected, using soil moisture instruments to ensure soil is at optimum moisture and avoiding irrigating non-target areas such as roadways and neighbouring fields."

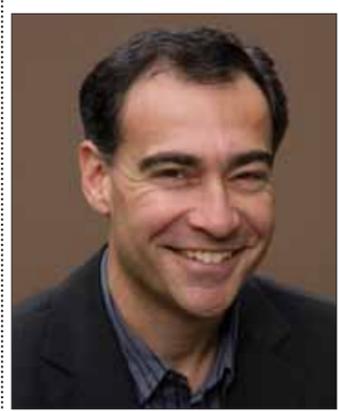
Despite water conservation efforts, the increasing demand for water has Grape Growers CEO, Debbie Zimmerman stating, "Weather patterns have changed significantly over the years and it will be our collective efforts to plan for these shifts in climate. Clearly

## COMING EVENTS 2016

- |              |  |
|--------------|--|
| Sept 2       | Verona Garlic Festival, Verona, ON   |
| Sept 10-11   | Stratford Garlic Festival, Stratford, ON   |
| Sept 13      | Ontario Berry Growers' Association Annual Farm Tour, Barrie Hill Farms, Barrie, ON   |
| Sept 13-15   | Canada's Outdoor Farm Show, Woodstock, ON  |
| Sept 14      | Ontario Produce Marketing Association Annual Golf Tournament, Lionhead Golf & Country Club, Brampton, ON   |
| Sept 14      | Grape Growers of Ontario Celebrity Luncheon, Club Roma, St. Catharines, ON   |
| Sept 18      | 6th Annual Toronto Garlic Festival, Artscape Wychwood Barns, Toronto, ON<br><a href="http://www.torontogarlicfestival.ca">www.torontogarlicfestival.ca</a> |
| Oct 1        | Holland Marsh Soupfest, Ansnorveldt Park, Ansnorveldt, ON  |
| Oct 3-4      | Advancing Women Conference, Fairmont Royal York, Toronto, ON   |
| Oct 5, 6     | Canadian Greenhouse Conference, Scotiabank Conference Centre, Niagara Falls, ON  |
| Oct 14-16    | Produce Marketing Association Fresh Summit Conference and Expo, Orlando, FL  |
| Nov 1        | Paper and Paperboard Packaging Environmental Council, annual general meeting, venue TBA  |
| Nov 4-13     | Royal Agricultural Winter Fair, Direct Energy Centre, Toronto, ON  |
| Nov 11       | Ontario Produce Marketing Association Gala Dinner and Awards Ceremony, Universal Event Space, Vaughan, ON  |
| Nov 21       | Ontario Food Tourism Summit, Ottawa, ON  |
| Nov 21-23    | 50th Annual Alberta Potato Conference and Trade Show, Fairmont Banff Springs Hotel, Banff, AB  |
| Nov 21-23    | CHC/CPMA Fall Harvest Event, Ottawa, ON  |
| Nov 29-Dec 4 | Outstanding Young Farmers Event, Niagara Falls, ON   |
| Dec 4-6      | North American Strawberry Growers, Raspberry Growers and Blackberry Growers, Grand Rapids, MI<br><a href="mailto:info@nasga.org">info@nasga.org</a>        |
| Dec 6-8      | Great Lakes Fruit, Vegetable and Farm Market Expo, Devos Place Convention Center, Grand Rapids, MI   |
| Dec 7        | Ontario Potato Board Annual General Meeting, Holiday Inn, Cambridge, Ontario   |
| Dec 8        | CanadaGAP Annual General Meeting, Canadian Federation of Agriculture Boardroom, Ottawa, ON   |

RETAIL NAVIGATOR

Packaging: on-shelf, off-shelf, on-line



PETER CHAPMAN

Last month we shared the components of effective packaging:

**Merchandising.** As you prepare to design packaging for a new product or revitalize an existing product you need to visit the stores to understand how the products in your category will be merchandised.

**Your unique selling proposition and brand promise.** The best place to sell your product is in the store. What are the top three things you need to convey to the consumer that will entice them to pick it up and put it in their shopping cart?

**Regulations.** One of the biggest challenges to developing effective packaging is to make it compliant with all regulations. Functionality for the product during shipping, in the store and at home. One of the most important functions for packaging is to protect the product as it moves from your facility, through your customer's supply chain to the store shelf.

**On shelf, off shelf and on line.** Your packaging needs to sell on the shelf, in an off-shelf display and in our new world, on-line.

**Examples of effective packaging**

Packaging can increase sales. Recently in produce we have seen bags for items that were often sold in bulk. The consumer buys the bag which usually has more than would be normally purchased. We see examples of this in cherries, beans and potatoes.

Your packaging can give the consumer ideas in the store. This will sell your product and perhaps a loaf of bread. Retailers love ideas that sell more than one product.

More often we see symbols communicating a message. Websites are moving more to this format. Iam's pet food lists many product attributes with symbols and text.

Communicating value in commodities is a challenge. This paper overwrap is effective to communicate organic kale.



Organic kale

Protecting tomatoes is important and we see a very unique bag from Sun Select where they have replicated a mason jar to give the product an authentic feel.

Your packaging should help the consumer make a quick decision. These fresh herbs are designed to help the consumer choose the correct protein or the flavour of the world cuisine they are trying to achieve.

Consumers are looking for ideas and many are looking for products to help them cook like a chef. These vegetables from Mann's are called Culinary Cuts. The name implies that they will be cooking like a chef.

**Packaging is so important**

You should always be looking for great packaging ideas. Keep a file of ideas that will help sell more of your products.

If you have some ideas to make packaging design more



Greenhouse tomatoes

effective please give me a call at (902) 489-2900 or send me an email at pchapman@gpsbusiness.ca.

**INDUSTRY NEWS**

**SKUfood.com takes flight**

I am excited to share the news that Gary Morton and I have launched SKUfood.com. We have teamed up to develop an online community for people in the food industry. Often we get requests to help producers and processors but it's just not realistic to do this one company at a time. This on-line community is an opportunity for people to get access to the knowledge we have and implement it in their own business.

For a chance to see what this is all about check out [www.skufood.com/free](http://www.skufood.com/free) for some awesome FREE information you can implement in your



Fresh herbs

business today. It is FREE and our gift to you. Once you have a chance to see what we have let me know what you think or if there are other topics you would like to see covered.

**RETAIL NEWS**

**Loblaw sends letter to suppliers regarding 1.45% deduction**

In July, Loblaw's leaders sent a letter to suppliers stating they believe they have had to absorb hundreds of millions of dollars in unjustified cost increases. The message was clear they are not happy and any suppliers who received the letter who ship to them after September 4 will see a deduction of 1.45 per cent.

Since the Loblaw letter went out, other retailers have communicated the same message to their suppliers. Recently we have seen the price of oil and currency



Fresh-cut vegetables

impacting product costs. I believe retailers are frustrated because when oil went up they agreed to cost increases however when it took a plunge, how many suppliers reduced their costs?

Producers and processors must focus on the facts and also push back on their suppliers to keep costs in line.

*Peter Chapman is a retail consultant, professional speaker and the author of A la cart-A suppliers' guide to retailers' priorities. Peter is based in Halifax NS, where he is the principal at GPS Business Solutions. 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. pchapman@gpsbusiness.ca*

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## FOCUS: NEW EQUIPMENT AND TECHNOLOGY

## Spore traps prove valuable predictor of late blight on potatoes

EUGENIA BANKS

This growing season, the Ontario Potato Board asked me to evaluate an innovative spore trapping technology to take late blight management to the next level. Spore traps should detect the presence of late blight spores in the air before infection takes place and before symptoms are visible in fields.

Knowing that late blight spores are present will help potato growers to better time sprays and to include fungicides specific to late blight which are more effective than protectant fungicides. Wind can spread spores up to a hundred kilometers; thus late blight spores are likely present in other areas of the province.

We installed spore traps in potato fields in the Alliston and Shelburne areas. The filters that trap the spores were replaced twice a week and sent to a

laboratory for analysis. Polymerase Chain Reaction (PCR) based tests were used to identify the presence of late blight. This test is very reliable and specific; the risk of false positives is negligible.

To validate the performance and effectiveness of the spore traps, the fields were monitored twice a week; drone technology was used once a week.

All the PCR tests in June gave negative results; no late blight spores were found in the traps. However, during the week of July 7, late blight spores were trapped in both areas, Alliston and Shelburne. Field scouting and drone flights indicated that the fields were healthy and well protected with fungicide applications. These preliminary results indicated that spore traps are invaluable tools to predict the development of potato late blight. Weather conditions -- wet and cool -- are also important factors that influence the development



of this disease.

Emails were sent to the organizations of Ontario potato growers and tomato growers that late blight spores were in the Alliston and Shelburne areas. The project ended the last week of August. Studies will continue

in 2017.

This project is funded in part through Growing Forward 2 (GF2), a federal-provincial-territorial initiative. The Agricultural Adaptation Council assists in the delivery of GF2 in

Ontario.

*Dr. Eugenia Banks is a potato consultant to the Ontario Potato Board.*

## 'Smart' door contributes to energy efficiency

KAREN DAVIDSON

When Vineland Growers' Cooperative built its new 30,000-square-foot storage facility near Niagara-on-the-Lake, Ontario, energy efficiency was one of the key goals. One of their suppliers, Penn Refrigeration, suggested a high-speed door for the cold storage rooms for tender fruit.

Sourced from TNR Industrial Doors, a Canadian-based company, this door opens and closes in a few seconds, allowing quick access by employees.

"It's a smart door," says Dave Lepp, Vineland Growers' director of operations, "in that it operates on a sensor that detects the approach of a tow motor and operator. It is not activated if a person walks by or if it's approached at the wrong angle."

The benefits are multifold. There's no humidity inside and little condensation on the exterior. Coolers run more efficiently. No air curtain is required.

These high-speed doors are becoming popular in the food industry says Erik Klein-Horsman, door division sales, O'Brien Installation Limited. "It's important to have environmental separation between the cooler and the dock area," he says. "There's a heated guide and a heated bottom bar so that no condensation forms on the outside. This is important when storing peaches."

Another feature of this high-speed door (Chill-Fast model) is that it has a direct-drive system with no chains or pulleys. Although the door opens at 75 inches per second, it has a soft

start and stop to ensure no strain on the door materials. The door closes on a timer which can be programmed according to need. In the case of Vineland Growers' Cooperative, it's 30 inches per second. The springless design is warranted for a million cycles.

Klein-Horsman notes that the greenhouse vegetable industry is also discovering the benefits of high-speed doors for newly built facilities.



This high-speed door is manufactured by TNR Industrial Doors. Photo by Glenn Lowson.

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## FOCUS: NEW EQUIPMENT AND TECHNOLOGY

## New plant growth regulator promotes red colouration in bi-colour apples

KAREN DAVIDSON

For the first time this fall, Canadian apple growers have the opportunity to use Blush plant growth regulator (PGR). American competitors have had access to the product since 2014.

With the active ingredient prohydrojasom, a naturally occurring plant hormone, the product promotes red colouration in bi-colour apples such as Fuji, Gala, Honeycrisp, Ambrosia, Paula Red and Pink Lady. If it's a rainy, cool fall, it could make a difference in grading.

"This product hastens the accumulation of anthocyanins," says Jim Kruger, northeastern representative for Fine Americas, Inc. who presented to Ontario's Georgian Bay growers in late July. Anthocyanins are red pigments that belong to a class of molecules called flavonoids. Along with stimulating fruit colouration, anthocyanins act as powerful antioxidants.

The PGR does not affect firmness, sugar levels or ethylene production. It's sprayed within seven to 28 days of harvest, along with a non-ionic surfactant. While no trials have been conducted in Canada, apple growers in both New York state and Washington state attest to the product's value. Colouring is a complicated process, they note, with the product working well under cooler conditions.

For growers who use other

PGRs to manage fruit maturation and ripening, there is no concern in mixing two products. Blush PGR can counter the effect of "colour drag" from other harvest management products. Kruger suggests using a tight spray interval of seven to 10 days. "The longer out you can apply the product before harvest, the more consistent the results," says Kruger.

In many apple growing areas, droughty conditions have prevailed this season. "If you were to give emotions to an apple, you can imagine that the last thing it would worry about is colour," says Kruger. "It just wants to protect the seed, survive and say my job is done for the year."

One side benefit of Blush PGR is improved harvest efficiency. It can increase the percentage of packable fruit in the early part of the season, spreading labour costs. Blush PGR is available to Canadian apple growers through N.M. Bartlett. According to Sean Bartlett, sales representative, the product has a fit for bi-coloured fruit.

"Growers in the northeast generally get fairly good colouring in the fall due to the warm days and warm nights," he says. "However we have trouble achieving enough colour to get away from multiple picks. The hope with this new product is that we have another tool to help achieve more uniform colouring, more consistent yields and greater tray fruit.

Early indications are that

growers plan to try the product on Fuji, Honeycrisp, Ambrosia, McIntosh and a few others. For certain varieties, it may be harder to justify the expense.

"Macs, for instance, do not fetch the money a Honeycrisp apple would but if we can pick 15 per cent more on the first pick or pick everything on the tree at once, we are starting to save significant dollars," says Bartlett. "I would say southwestern Ontario growers would definitely see a benefit on certain varieties such as Honeycrisp which is challenged to colour properly."

In Ontario, it's been a hot and droughty summer, but apple growers need the cool nights in September to get good colouring. Otherwise, the colouring tends to bleach out. The use of Retain PGR will mitigate this colouring process. All growers have blocks that don't receive as much colouring as they would like.

We are recommending growers stay at the high rate suggested by the manufacturer, with two applications spaced a

### Blush trials - Gala



Gala Control

Gala Blush

few weeks apart," says Bartlett. "The first application should be going on 35-42 days before anticipated harvest. With this timing in mind, you want to make sure that the apples have already started to colour. This product will not turn a green apple red. I would also recommend that growers apply their first spray before applying Retain to get the product working best as possible."

If the product is part of a tank mix, it should be mixed with a non-ionic surfactant for improved uptake. It can also be

tankmixed with Retain with no issue, in which case growers should substitute the non-ionic surfactant for a silicone surfactant.

"So for the launch year, I hope growers will walk before they run," says Bartlett. "Start with the high rate and work backwards and try some different trials on your farm with different varieties and timings. We are all learning how Blush PGR works in the northeast and we want to make sure it does the best job possible."



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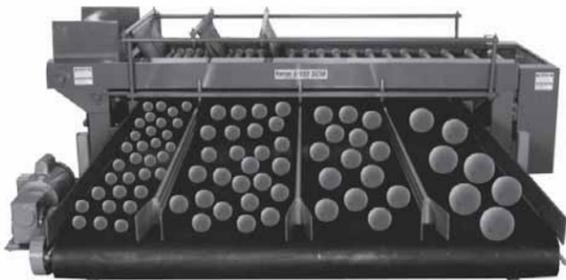
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**FOCUS: NEW EQUIPMENT AND TECHNOLOGY**

# Three-row sprayer arrives in Canada

Acres of high-density orchards are increasing in all apple-growing areas of Canada. The taller, spindle-like architecture of fruiting walls require a totally different approach to spraying for pests and fungi. Hol Spraying System (HSS) has developed a high-efficiency sprayer that provides growers with less drift, lower fuel consumption, more consistent coverage and increased operator safety.

The unique distribution system enables the grower to place the product where it needs to be and not blow right by, helping save on water use. Where growers may have used 700-1000L/ha, users are getting adequate coverage with 250-500L/ha.

Secondly, the distribution of air through the tower is much different than current machines on the market. The HSS uses a custom cowling on the fan to direct air evenly to all outlets of the tower sprayer, ultimately providing even distribution of product to the canopy. With this system, growers are also able to adjust the air up, down, and side-to-side based on grower needs or wind directions. This makes the system very versatile and gives the grower ownership of where the product goes. With this system there is also the option to include the woolly apple aphid support. This is a unique nozzle that can be added to the sprayer to push spray up and into the tree from a different vantage point.

In addition, the CF2000-3 has a lot of features that promote operator safety by reducing potential for exposure. One convenient feature is the access port separate from the tank fill port. No need to remove the basket to examine/clean the interior, and no need to remove the basket and come in contact with residues. There is also a clean water tank that supplies two venturi nozzles to rinse the tank out after a spray, limiting the exposure to growers who would have otherwise have used a pressure washer. Aside from the clean wash tank there is also an on-board hand wash tank, giving the growers access to clean water while spraying.

“With standard features like a clean-water tank for hand-washing and a recirculating tank-rinsing system, it’s great to see an airblast sprayer that makes operation and cleanout safer, easier and more effective,” says Jason Deveau, application technology specialist for OMAFRA.

This piece of equipment comes standard with dual axle. This helps cut down on compaction. It also has the capability of moving the rear axle out by 12 inches on either

side, further cutting down on ruts and compaction during the wet months. The sprayer is also whisper-quiet, cutting back on noise pollution, an ever growing issue with urban sprawl. As mentioned above, the sprayer gives the operator the ability to have control over the deposition of product, maximizing the pesticide on the intended target instead of potentially drifting into environmentally sensitive areas.

The H.S.S. control box has the capability of measuring the rate per ha output, nozzle output, and tank metering. This gives the opportunity for the

operator to have control of all parameters from the tractor seat, limiting exposure and helping cut down on overfill.

The control box also comes GPS ready. With a GPS-enabled tractor, growers will now be able to link the sprayer to the tractor. The tractor can speak with the sprayer’s plc and have it shut down at the end of the row. These features brings orchardists one step closer to the autonomous sprayer.

Equipment is now available in Canada through N.M. Bartlett. For a video, go to: [www.youtube.com/watch?v=ha9ZnnWOSZk](http://www.youtube.com/watch?v=ha9ZnnWOSZk)



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## FOCUS: NEW EQUIPMENT AND TECHNOLOGY

## Check out new equipment at Canada's Outdoor Farm Show, Sept 13 - 15



## New Kubota M7 Series Ride'n'Drive

Originally unveiled to Canadian farmers at Canada's Outdoor Farm Show last year, the new Kubota M7 series tractors will be available to test drive this fall. The Kubota M7 ride'n'drive zone will be open all day on September 13, 14 and 15 for farmers to experience. Interested farmers can cross over to the ride'n'drive zone at Gate 5 on Lower Machinery Mall. Feel the power of the M7 tractors directly from the driver's seat. In addition to the ride'n'drive zone, the Kubota flagship exhibit will display its full range of equipment at the corner of 1st Lane and South Mall.



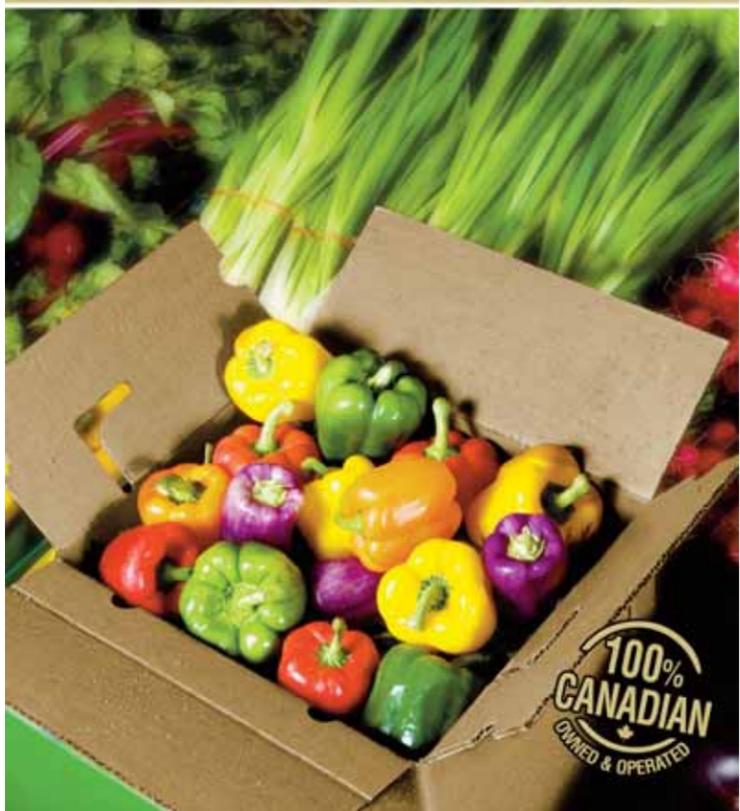
## Self-Propelled Sprayer Ride'n'Drive

Growers shopping for a self-propelled sprayer this year can save time coordinating demonstrations with sales representatives by simply making a trip to Canada's Outdoor Farm Show (COFS). The 2016 field equipment demonstrations will include a self-propelled sprayer ride'n'drive zone.

The self-propelled sprayer ride 'n' drive will be ongoing from 10:00am to 3:00pm in the Southwest Demo Field. Among the manufacturers available to test drive will be John Deere, New Holland, Case IH/Green Lea Ag Centre Inc., HJV, Agrifac/Specialty Vegetable Equipment as well as Apache/R. E. Egger Truck and Machine.

The new ride 'n' drive test track will feature a partially cropped, partially bare field so drivers can easily test each sprayer for stability, turning, and rinsing on the go among other aspects. The track will include turns to get a feel for both sides while performing a high speed turn, as well as a number of obstacles for operators to maneuver around to get a good feel of the machine's capabilities.

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## Soil monitoring devices help conserve water

After a summer of drought in several parts of Canada, water conservation is top of mind. A young entrepreneurial team based in Toronto, Ontario has been working with the floriculture sector on smart irrigation with successes that can be translated to horticulture.

Peytec, founded in 2011 by Peyman Moeini, biomedical, electrical and computer engineering, MASc/PhD cohort graduate student, has focussed on an Internet of Things (IoT) solution for water scarcity. Working with Sheridan Nurseries, the group identified that its Sensor Track Crop Health solution can help with yield improvement and resource

management. It has an easy plug and play, mobile and scale technology platform.

Sensor Track Crop Health is a patent-pending, cloud-based battery efficient wireless solution that monitors your crop health remotely and in real-time 24/7 cost effectively. It tracks soil moisture, soil temperature, electrical conductivity and pH. All data is easily accessed in a user-friendly cloud dashboard and accessible by mobile phone, desktop with real-time alerts.

An additional piece of technology is called Beagle Trace GPS, a real time freight locator and temperature reading for freight transportation managers.



For more information, contact Debra Chanda at [dchanda@peytec.com](mailto:dchanda@peytec.com), 416-500-2681.

FOCUS: NEW EQUIPMENT AND TECHNOLOGY

# Labour-saving harvest aids are the trend

KAREN DAVIDSON

This crop harvester was on trial at Barrie Hill Farms this past summer to good reviews from Morris Gervais. While its most efficient use is with asparagus, it can be amortized

over day-neutral strawberries on plastic beds as well.

“As growers, we need to think about labour savings,” says Gervais. “We can’t totally automate the asparagus harvest, but this is a step forward.”

Located near Barrie, Ontario, the farm grows a diverse range

of fruits and vegetables and markets through their on-farm market facility.

The one-person asparagus harvester has an advantage over three or five-person harvesters in that there’s no need to slow down for heavy patches for one person. The operator of a



one-cart system can regulate the most efficient speed for the asparagus maturity in the row.

“This is an intriguing and challenging machine,” says Gervais. “The electric cart is battery-powered but the kicker is that it must be plugged in overnight to recharge. For some remote fields, this would not work.”

The machine worked well in the summer 2016 season with no breakdowns. Maintenance was minimal. The long-term question will be the life of the battery over multiple seasons.

The machine is available through Specialty Vegetable Equipment, Princeton, Ontario.

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# Ontario Berry Grower

Ministry of Agriculture,  
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## Fungicide application in berry crops

JASON DEVEAU

(This article has been shortened. For the full version see <http://sprayers101.com/berry-fungicide-survey/>)

In the spring of 2016, the Ontario Berry Growers Association (OBGA) conducted a survey of its membership to poll how fungicides were being applied. The results were very interesting

Respondents reported on how much carrier (i.e. water) they used to spray fungicide on their crops. I have converted all values into the most common units: l/ha, US g/ac l/ac.

There appears to be a lot of variability in the volumes applied.

### Improving coverage

So, is there an ideal sprayer set up and volume? The variability in crop staging, crop morphology, target location and spray equipment make a single recommendation impossible. But there are diagnostic tools and a few simple rules to help a sprayer operator determine a volume to suit their particular needs. Much can be accomplished with these three things:

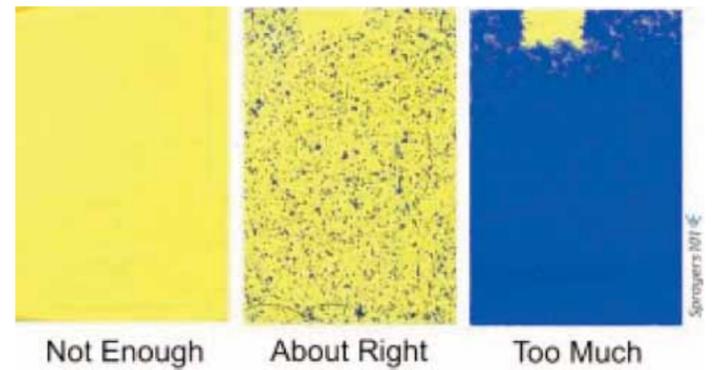
- Water-sensitive paper
- A modest selection of nozzles and a nozzle catalogue
- An open-minded sprayer operator willing to spend a little time and reconsider traditional practices

Water-sensitive paper is placed in the canopy, oriented

to represent the target (e.g. leaf, bloom, etc.). It is important to put multiple papers in at least three plants to ensure the coverage reflects a typical application. The paper changes colour when it's sprayed and this provides valuable and immediate feedback. Did the spray go where it was supposed to go and did it distribute throughout the target? If so, then the operator now knows that they can safely focus on timing rather than targeting. If not, a little diagnosis is required:

**Were targets completely drenched?** If so, there is too much coverage. Operators can drive faster (if possible, and as long as it doesn't create drift), reduce operating pressure (if possible, and as long as the

### Rule-of-thumb fungicide coverage on water-sensitive paper.



nozzle is still operating in the middle of its registered range), or change nozzles to lower rates (as long as spray quality is constant).

**Were targets only partially covered,** as if a leaf obstructed part of the target and created a shadow? This mutual-shading is the bane of spraying dense canopies. One possible solution lies in understanding droplet behaviour: Coarser sprays generally mean fewer droplets and they move in straight lines. Therefore, when they hit a target, they might splatter or run-off, but typically their journey is over. If the spray is too Coarse, a slightly Finer spray quality increases droplet counts and may help droplets navigate around obstacles and adhere to more surfaces. Sprays that are too Fine will not penetrate dense canopies without some form of air assist. They slow very quickly and tend to drift and evaporate before they get deep enough into a canopy to do any good. A Medium droplet size is a good compromise because it produces some Fines and some Coarser drops – the best of both worlds.

Increasing volumes and reconsidering spray quality often helps, but there might be other options. If using air assist,

there are tests that can confirm the air volume and direction are appropriate. Another solution might lie in canopy management (where pruning bushes and canes can help spray penetration immensely). Still another might lie in the use of adjuvants to improve droplet spread on the target.

**Were targets missed entirely, or coverage is consistent but sparse?** The operator is likely not using enough water, and/or the spray quality is too fine. It has been demonstrated time and again that higher volumes improve coverage, but operators can try any of the options listed previously for partially-obstructed coverage. All the reasoning is the same.

Spraying fungicides effectively requires an attentive sprayer operator. Timing and product choice are very important, but when it is time to spray the sprayer operator should diagnose coverage with water-sensitive paper, and be willing to make changes to the sprayer set-up to reflect changing conditions. Thanks to the OBGA for sharing the survey data.

*Dr. Jason Deveau is application technology specialist for OMAFRA based in Simcoe, Ontario.*

Table 2: Average water volumes used to spray fungicides

	Number reporting	l/ha ± std (max./min.)	US g/ac ± std (max./min.)	l/ac ± std (max./min.)
Highbush Blueberries	7.0	534.2 ± 340.1 (1,000/150)	57.1 ± 36.4 (106.9/16)	216.2 ± 138 (404.7/60.7)
Day-neutral Strawberries	22.0	418.5 ± 192.2 (1,000/224.5)	44.7 ± 20.6 (106.9/24)	169.4 ± 77.8 (404.7/90.8)
June-bearing Strawberries	33.0	403.1 ± 235.1 (1,000/50)	43.1 ± 25.1 (106.9/5.3)	163.1 ± 95.1 (404.7/20.2)
Raspberries & Blackberries	27.0	450.1 ± 279.4 (1,200/50)	48.1 ± 29.9 (128.3/5.3)	182.1 ± 113.1 (485.6/20.2)

## Runner removal increases Albion yields

BECKY HUGHES, JOHN ZANDSTRA, TOKTAM TAGHAVI AND ADAM DALE

Many growers in Ontario have planted day-neutral strawberries in recent years to take advantage of a longer marketing season. Day-neutral production systems are very different than those we have used for years to produce June-bearing strawberries. For day-neutrals, plants are set at a high density on plastic-mulched, raised beds. Cultural practices are used to produce large multi-crown plants for the greatest fruit production. In most of Ontario, fruit is usually harvested in the first year and the spring of the second year in a modified annual system.

Runner removal is a costly but recommended practice in day-neutral strawberry production. A trial was planted at Cedar Springs in southwestern Ontario and New Liskeard

in northeastern Ontario in 2014 to examine the effects of runner removal on harvest distribution, harvest efficiency/recovery, yields and plant growth. Runners were removed weekly starting six weeks after planting, three times a season at six, nine and twelve weeks after planting, once a season at ten weeks after planting or not at all.

The effects of runner removal on yields and plant growth depended on the year, cultivar and site. Runner removal treatments were continued in 2015, however there were few treatment effects on yield in the second year at either site.

There were many effects of runner removal in the planting year. This article will concentrate on the effects on yields.

At both sites, all fruit was harvested twice a week and sorted into marketable (no rot and regularly shaped with a diameter greater than 1.5 cm) and unmarketable. Fruit in each

Runner removal treatment	Albion yields 2014 (kg m <sup>-1</sup> )		Albion berry wt. (g/berry)	Seascape yields 2014 (kg m <sup>-1</sup> )		Seascape berry wt. (g/berry)
	Total	Marketable		Total	Marketable	
Weekly	1.92 a <sup>1</sup>	1.72 a	16.4 a	2.33 a	1.99 a	12.7 a
3 times	1.81 a	1.65 a	15.4 a	1.92 a	1.60 a	12.2 a
1 time	1.90 a	1.60 a	15.9 a	1.96 a	1.65 a	12.3 a
Never	1.32 b	1.21 b	15.6 a	2.12 a	1.83 a	12.3 a

Table 1. The effects of runner removal at different intervals on the total and marketable yields, and berry weights of Albion and Seascape in Cedar Springs in 2014.

<sup>1</sup> Numbers within a column with different letters are significantly different.

category was weighed and counted. Berry weights (g/fruit) were calculated for marketable fruit only.

Runner removal increased the yield of Albion in the planting year. Runner removal increased the total and marketable yields of Albion in the planting year at both sites. In Cedar Springs, the total yield of Albion was reduced by 30 per cent when runners were not removed (Table 1).

Seascape responded to runner removal only in the more

challenging northern climate in New Liskeard. In the cooler climate, both Albion and Seascape produced greater yields in the planting year with weekly runner removal but not with the less frequent treatments (Table 2, next page).

The timing of runner removal was more critical at the northern site with early, more frequent runner removal giving the best results.

Removing runners weekly took almost twice as much time as the other two runner removal

treatments at both sites. However, the amount of plant material removed by the once-a-season runner removal treatment was six times that of the other two runner removal treatments. The time recorded for runner removal was the time to cut the stolons from a metre of row and didn't include the time to remove the plant material from the field.

CONTINUED ON NEXT PAGE

BERRY FOCUS

# Check for signs of scale insects on blueberry



Figure 1. Putnam scale on fruit. Each dot is a single scale insect.



Figure 2. Putnam scale on leaves.



Figure 3. Lecanium scale, unidentified species.



Figure 4. Azalea scale egg sac.



Figure 5. Azalea scale – pink eggs under protective cottony covering.



Figure 6. Putnam scale on new growth.

HANNAH FRASER AND PAM FISHER

Scale insects seem to be an emerging pest in blueberries in Ontario and several states. We noticed at least three finds of scale insects last year and reports are coming in from new locations. It is possible the spray programs used to manage spotted wing drosophila are having an impact on natural predators and parasites that would normally help keep numbers down.

There are several species of scale insects affecting blueberries in Ontario, including both soft (Azalea scale, *Eriococcus azalea*, and Lecanium scales, with multiple species including terrapin) and armored scales (Putnam scale *Diaspidiotus ancyclus*). Scales have piercing-sucking mouthparts. Heavy scale infestations can weaken blueberry plants and reduce yield. Soft scales feed on woody tissue, stems, and/or leaves. Soft scales can produce large amounts of honeydew (attractive to ants), which result in the development of

unsightly sooty mold. Putnam scale can cause defoliation, decline and death of blueberry plants if populations are sufficiently high. It will also feed on fruit (Figure 1), causing direct damage, and on leaves (Figure 2).

Mature Lecanium scales are often brown with a rounded or helmet-like appearance, six to eight mm in length at maturity (Figure 3). Azalea bark scale is most easily recognized by the white cottony sacs (Figure 4) that protect the developing pink eggs underneath (Figure 5). Putnam scales are small (1-2 mm at maturity) (Figure 6) and have a flattened, plate-like cover that can be removed to reveal the insect underneath. When numbers are high, they appear crust-like. In contrast, the “helmet” of soft scales is part of the body wall of the insect and cannot be removed; if you flip off the cover you will remove the entire insect (possibly revealing eggs or newly hatched nymphs). Putnam scale is easy to miss on old bark but the small grey dots are fairly obvious on leaves and

fruit, or on new growth.

Check branches for signs of scale insects. Scales overwinter on older, woody canes. Look at new growth as well as older wood. Plan to prune well next winter – regular pruning of old canes is important in keeping scale under control - and apply dormant oil in early spring. Thorough coverage is essential. The third step for lecanium scale control is application of Movento insecticide, after bloom but before harvest (7 day phi). The optimum timing is when scale insects are producing “crawlers,” the mobile first instar nymphs that leave the protection of their (now deceased) mother’s shell. These crawlers spread to other parts of the plant, or nearby plants, in search of places to settle and feed. Crawlers are tiny and can be difficult to spot; use double-sided tape to help monitor their activity.

*Hannah Fraser is entomologist for horticulture and Pam Fisher is horticulture fruit specialist with the Ontario Ministry of Agriculture, Food and Rural Affairs.*

## Runner removal increases Albion yields

CONTINUED FROM LAST PAGE

This would be necessary with once-a-season runner removal given the amount of material present. As the work crew also preferred removing younger runners with less plant material, removing runners every week or two may be the best

compromise from a labour and yield point of view.

*Becky Hughes, John Zandstra, Toktam Taghavi and Adam Dale are horticultural specialists, University of Guelph.*

Runner removal treatment	Seascape yields 2014 (kg m-1)		Berry wt. (g/berry)	
	Total	Marketable	Seascape	Albion
Weekly	1.52 a <sup>1</sup>	0.89 a	13.2 a	21.1 a
3 times	1.32 ab	0.76 ab	13.3 a	19.4 ab
1 time	1.23 b	0.60 b	13.3 a	19.7 ab
Never	1.25 b	0.64 b	13.8 a	13.8 b

Table 2. The effects of runner removal at different intervals on the total and marketable yields of Seascape, and berry weights of Albion and Seascape in New Liskeard in 2014.

<sup>1</sup> Numbers within a column with different letters are significantly different.

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## BITS AND BITES

## Canadian Greenhouse Conference welcomes lighting experts

Vegetable greenhouse growers will be all ears for what Silke Hemming has to say about light. The researcher from Wageningen University and Research Centre, The Netherlands, is the keynote speaker October 5 on the future of the greenhouse industry, predicting that greenhouses will transform from being energy consumers to energy suppliers.

Most recently, Hemming has headed the greenhouse technology scientific research team. The Wageningen UR LightLab is a unique facility with the most modern measurement equipment for optical properties of greenhouse materials. She is also leader of the International Society of Horticultural Sciences working group "Light in Horticulture." She conducts several research projects on greenhouse systems in different climate zones

world-wide.

Hemming will describe the Dutch research program's newest results on energy saving, focussing on energy conservation by greenhouse design, new coverings and the use of sensors and decision support systems.

Joining her in the vegetable sessions is Xiuming Hao, Agriculture and Agri-Food Canada, who will report on his latest research on lighting strategies and climate control to increase yield and quality and improve the response of greenhouse vegetables to long photoperiod of lighting in year-round production. Todd Graham, Ontario Greenhouse Vegetable Growers, will reveal details on a study conducted at seven commercial greenhouses looking at various HPD/LED lighting configurations on different greenhouse

vegetable crops.

University of Guelph's Youbin Zheng will highlight the similarities and differences in fixtures both within and between LED and HPS technologies. Philips Lighting expert Abhay Thosar will talk about supplemental lighting requirements, developing proper lighting layouts and the economic feasibility of LEDs. Erik Runkle, Michigan State University, will share his expertise on how the light spectrum can be manipulated to influence plant morphology of young plants.

The Canadian Greenhouse Conference will be held October 5 – 6, Scotiabank Convention Centre, Niagara Falls, Ontario. For a detailed agenda and registration, go to: [www.canadiangreenhouseconference.com](http://www.canadiangreenhouseconference.com).

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Dr. Silke Hemming

floral and vegetable greenhouses, pre-register no later than September 26.

## Ontario processing vegetable industry offers bursaries

The Ontario Processing Vegetable Growers (OPVG) and the Ontario Fruit and Vegetable Processors Association (OF&VPA) are continuing with a bursary fund to support and encourage individuals pursuing a career in any aspect of the processing vegetable industry. These organizations are working together to ensure that there are new individuals who will have the interest, skills and abilities to further develop and

grow this sector of Ontario's agri-food economy.

Up to five bursaries are available to students this fall, including bursaries in memory of former OPVG directors Jim Whitson and Ken Epp. Note that the Jim Whitson bursary is awarded to a student attending Ridgeway College. The award in memory of Ken Epp receives an additional \$1,000 from the fund established in his name by the

OPVG. Applicants must be a resident of Ontario and registered as a full-time student at any college or university entering the second, third, fourth or post graduate year of study which relates in some aspect to the processing vegetable industry.

For further details, please contact: Ontario Processing Vegetable Growers at 519-681-1875.

The Bursary Application Form is

available at [www.opvg.org](http://www.opvg.org) or on request from the OPVG office (519-681-1875). Applications must be submitted no later than October 15th and will be received by regular mail at 435 Consortium Court, London, ON N6E 2S8, by e-mail at [opvg@opvg.org](mailto:opvg@opvg.org) or fax (519) 685-5719 and can also be submitted online at [www.opvg.org/opvg-bursary/](http://www.opvg.org/opvg-bursary/).

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One gets his experience in diverse ways. Students are often caught between needing to take a well-paying position that provides little experience in their chosen field, or one that gives great experience but little remuneration.

I had the chance to do both things at the same time in successive summers. Even close to 50 years later, those experiences still provide me with perspective that I can use on the job. Not all that I learned was in a positive way -- many things taught me NOT to do as I saw but to do the opposite for success.

I was already bored to distraction one early June day with classes finished and no exams to write, and no meaningful job awaiting me either. My mother, who was no doubt motivated to get me out of the house, picked up the old yellow pages, made a call and got me a job interview with a farm dealership. That was a watershed moment for me as it opened doors to an agriculture experience that was just ending an era and starting to usher in new ways to do things.

Anyone who ever met 'Dixie' Don Pallett never forgot him. He was an imposing figure sitting at his desk piled high with papers, invoices, bits of machinery and multiple phones. His Rotary Membership plaque was prominent, although I never realized the impact that would have later in my life. That interview was brisk, the questions eclectic, and the job offer came quickly.

I had truthfully said that I had my driver's license with the 'chauffeur' designation that allowed me to drive large 'farm' trucks. What I neglected to say was that I had it for less than two weeks and had never driven anything bigger than the family station wagon! No matter: the next day when I went to work I was expected to drive what seemed to be a monstrous 10-ton truck to make a delivery. On the job training started right then!

Many other tasks came my way that first summer including sales of everything from hardware, produce containers, pesticides both commercial and domestic, feed and grain, firewood (which we also had to split), fencing, and a million other items. Finding things was always a challenge but Dix knew where everything was all the time! I learned that organization is NOT just a neat and ordered facility. In fact it is a great memory honed as you dug through piles of 'stuff' to find what you remembered from the last time you looked for something! A good memory beats a good filing system most of the time. (And that explains the state of my desk today.)

We did a lot of farm work too, including hoeing, planting, pruning and harvesting. Later on I got to plow, cultivate, and then spray crops. We were taught to read the label, and had copies of the ODAF guides such as Publication 360 on hand to help us, but little actual guidance on how to operate equipment. That became part of the basis of my involvement later on with the Grower Pesticide Course. All the bad practices needed to be changed. Common sense and good luck prevented me from having any 'incidents,' but not everyone can be so lucky!

I had other experiences too. One day I noticed a police car had driven up the lane into the orchard, and that there was also another car there. I drove up and the police officer asked if I owned the orchard as he had seen these people 'helping

themselves.' After some discussion where they admitted they had no permission to pick, the police offered that if they paid me for what was taken, he would let it go. I asked for five dollars, and they scratched it together with coins and a few crinkled up dollar bills. After all, it was early August and the apples were small and green- useless to eat and already turning brown. (I still felt bad at taking what looked like all their money.)

Then came the really bad part as I got ready to go: their car was old, it had NL plates, and the cop asked for ownership and insurance, and they had neither. I felt really sorry for them, even though they had been stealing fruit. Learning to deal with cheats and thieves is important to anyone's experience but the consequences may be well beyond expectation. Compassion is needed to temper the impact.

While all this good experience on the farm and in the dealership was good, I knew it wouldn't pay the tuition for university. I managed to bluff my way into a job application the next year at the CNR (which later became CN). My job, when it came, was to work in the dining cars on various trains. What an eye-opener that was!

With no prior jobs in food preparation, waiting tables, or (most importantly) washing masses of dishes, I was sent on my first trip from Toronto to Winnipeg (and back) with NO instructions and no idea what the job would entail. I had to learn fast! The motion of the train and resulting nausea had to be endured as the dishes, glasses and silverware piles mounted. We only had enough for one service, so they needed to be cleaned for immediate re-use. Each meal service sat 48 passengers and lasted 50 minutes, and we had five sittings per meal, and four meals per trip each way. The time between was to clean up, re-set tables, and to grab a bite to eat or drink.

Our 'official' meals came



after each mealtime was over and usually just prior to the next one. We also had to sleep on the trains as it was a 30-hour trip each way. The student got the top bunk over the wheels! Eight dirty, sweaty, and 'unique' individuals slept in the often hot crew car. The odours are still 'memorable.' The others smoked and drank (and not water either!) till late most nights. I learned how to sleep in those conditions -- a great benefit for all my later hotel nights at various conferences!

The hotel in Winnipeg (The Empire) where we stayed overnight was so run-down that they later tore it down and even 40 years later it is still only a parking lot! We had three or four of us to a (huge) room, with only a basin on the wall. 'Facilities' were down the hall and the only shower in the hotel was two floors up! This was quite a learning process for an 18-year-old!

That first night the crew met downstairs in the bar (The Brass Rail if anyone from Winnipeg is reading this) and someone ordered two glasses of draft for all present. (The drinking age was still 21 back then.) As luck would have it, I had no sooner taken a swig than in came a cop in uniform, who sat down at the next table. I tried to surreptitiously push my beer glasses to others and to fake 'just being there.' He finally left after chatting to our second cook. I walked over and gave him (Cliff by name as I remember) my un-sampled beer and thanked him for getting rid of the cop. He laughed uproariously and said the 'cop' was a railway cop he knew, who was just there for a beer. He

had no authority over me, but could have lost his job for drinking on duty!

Another lesson learned was to never take a 'uniform' at face value, and to do my underage drinking away from prying eyes!

That first summer became two, but as we worked four days on and four days off, I kept my farm job for the other four days 'off.' Between the two jobs I could afford the university tuition fee. The money was one form of payment, but the experiences were the unpaid value that sticks today. Alas, neither of those opportunities exist today, as dining cars are now serviced like airplanes, and Pleasant View Farms and Dix are gone now.

When my first-year marks arrived in the mail my mother phoned my Dad who found me on the train in the Toronto station in late afternoon, waiting to depart. He passed me a paper with the marks and left. During that trip every single crew member took me aside and asked me how I had done, and then quietly told me to keep working hard at school so I didn't HAVE to do this job for the rest of my life like they had to. What an impression that made -- one I have never forgotten. They had so little hope of getting ahead, but were proud that at least I had that chance. Humility doesn't come close to describing that feeling.

I owe a lot to both job opportunities. They are what you make of them, or so I have been told. I owe a lot to the people I worked with who taught me a lot along the way. Hopefully, generations of students today will get the same opportunities as I did.

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CROP PROTECTION

# Stem and bulb nematode management in garlic

MICHAEL CELETTI

The stem and bulb nematode is a pest that can cause significant damage to garlic crops. The cool wet weather experienced last fall after planting and again in the early part of this spring 2016 has resulted in the spread of this pest within fields if infested garlic seed was planted last fall.

The stem and bulb nematodes can survive in garlic cloves used for seed as well as in the soil. In fact they are often introduced into a field of garlic by planting infested cloves. One stage (4th juvenile) of the nematode is particularly adapted to resist desiccation and freezing and can persist for many years under dry or cold conditions. A single female can lay up to 500 eggs within her life span and several generations can be produced within one growing season. It only takes 19 days for these nematodes to develop into mature adults when temperatures average around 15°C. They can live for 45 to 75 days depending upon the conditions. The short period of time between egg hatch and maturity together with the frequency of reproduction often results in an explosion of this pest population under cool wet conditions.

Stem and bulb nematodes

feed on cells near the basal root plate of the garlic plant. As they feed they inject enzymes into the cells which break down cell walls resulting in a rotting around the root plate. During wet weather some nematodes leave the infested garlic and swim to neighbouring healthy garlic plants. They enter the neighbouring garlic by getting in between the scales of the garlic bulb near the soil line. Under wet conditions, the nematodes can swim a short distance up leaves of small emerging plants in the spring and then move down between the leaves in films of water left from rain or dew. Later in the season, the nematodes can infect garlic plants through scales of the bulbs. If infection is closer to harvest, the nematodes may not cause noticeable damage to the mature bulbs. Growers may unknowingly select these infested bulbs and cloves to plant in the fall.

Managing bulb and stem nematode is not easy once it is introduced and becomes established in a field. Planting clean nematode-free seed into non-infested soil is the best option to avoid getting this pest. Unfortunately the nematode has a very extensive host range with more than 450 species of plants that can be infected. However, there are several races of this nematode, each with a specific limited host range. Although the entire host range for the Ontario race of stem and bulb nematode is not known, recent studies at the University

of Manitoba indicate that the Ontario race can also infect and multiply in yellow pea, as well as pinto, kidney and navy bean. Once introduced, a four-year crop rotation with non-susceptible crops such as a cereal crop, fumigating soil or planting a nematode suppressing cover crop such as oriental mustard in the rotation before planting garlic can help keep this pest suppressed in soil.

Planting clean nematode-free seed is the most important practice in managing this pest. If clean, nematode-free seed is not available, growers can try dipping infested cloves in a hot water bath at 49°C for 20 minutes; however, this is a very tricky technique and must be performed carefully to prevent damage to cloves. If the temperature drops below 47°C, the effectiveness of the hot water to kill nematodes in the cloves is significantly reduced. If the temperature of the hot water bath increases above 50°C, the garlic may be damaged resulting in poor emergence. Other management options are currently being investigated by the Ontario Ministry of Agriculture, Food and Rural Affairs, the University of Guelph and Agriculture and Agri-Food Canada.

*Michael Celetti is plant pathologist, horticulture crops for the Ontario Ministry of Agriculture, Food and Rural Affairs, based in Guelph, Ontario.*



The basal plate (the region of the bulb where the roots attach) of garlic bulbs severely infested with the stem and bulb nematode appear rotted and can be easily separated from the bulbs.



The Muck Crops Research Station, Bradford, Ontario is trialling various products to combat stem and bulb nematodes in garlic.

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## BASF Canada launches new AgSolutions horticulture website

BASF has launched a new AgSolutions Horticulture website. Created with horticulture customers in mind, the site offers easy navigation to help find solutions for specific crops and specific pests, while maintaining quick links to resources such as labels, SDS

and other product information.

The site will also be host to ongoing BASF news updates, programs and offers relevant information to Canadian fruit and vegetable farmers.

The new website is now live in both

English and French.

[www.agsolutions.ca/horticulture](http://www.agsolutions.ca/horticulture)  
[www.agsolutions.ca/horticoles](http://www.agsolutions.ca/horticoles)

Source: BASF Canada news release



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## CANADIAN HORTICULTURAL COUNCIL NEWS

## Captan re-evaluation update

The CHC Crop Protection Advisory Committee submitted a response to the Pest Management Regulatory Agency (PMRA) Proposed Re-evaluation Decision for Captan (PRVD2016-13) on July 29, 2016. This response was based on the results of grower surveys that were distributed through the provincial CHC member organizations. Surveys were conducted in five crop sectors: pome fruit, tender fruit, berries, grapes and vegetables and potatoes. Information regarding Captan use including application rates, number of applications, timing of applications, post-application field activities and the use of personal protective equipment was gathered.

Grower response was excellent with more than 300 surveys returned. The summarized survey data was provided to the PMRA with the request that this information be used to revise their risk assessments based on actual grower use of Captan rather than on the unrealistic assumptions PMRA used in the original risk assessments. The use of grower survey data in the risk assessments should result in more favourable outcomes and reverse the proposed re-evaluation to discontinue most uses of Captan in Canada.

The response to the Captan consultation was the final response to the seven PMRA proposed re-evaluation decisions for multi-site-mode-of-action (Group-M) fungicides published over the past three years. All proposed decisions either proposed discontinuation of all uses (mancozeb, metiram, ferbam, ziram, thiram) or the discontinuation of most uses and significant restriction on the limited remaining uses (chlorothalonil, captan). The devastating outcome of these proposed decisions, if not amended based on consultation, would be that growers would have no practical options to control resistant pathogen populations where already present or to prevent the development of resistance where it does not currently exist.

### New Brunswick hosts mid-summer apple meeting

The CHC Mid-Summer Apple Meeting was held on July 26 & 27, 2016 in Moncton, NB. The event was hosted by the Apple Growers of New Brunswick.

The working session included discussions on market situations and trends, research and innovation strategies and priorities, National Apple Planting and Replant Program

Opportunity, Ministerial Exemptions, and HS Codes for Honeycrisp.

The July 27 orchard tour included stops at:

- Master Packaging (Dieppe, NB)
- Verger Belliveau Orchard (Memramcook, NB)
- La Fleur du Pommier (Cocagne Sud, NB)

The 2017 Mid-Summer Apple Meeting and tour will be held in Quebec.



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