

FROM PRODUCER TO PROCESSOR

## Savoury vegetable chips have hit the sweet spot with consumers



For growers in Ontario's Holland Marsh, there's no better way to celebrate the harvest than with Soupfest which attracts two thousand consumers to Ansnorveldt Park, near Bradford, Ontario. This year's October 1 event will honour the humble roots of parsnips, carrots, beets, onions, leeks and potatoes. Parsnips, for example, are just one of the crops now glamorized by leading chefs. Cristina Hambly (pictured) and her husband John can testify to the enduring qualities of the root vegetable as they keep 38 acres of parsnips in their rotation at Gwillimdale Farms Ltd. Photo by Glenn Lowson.

### INSIDE

- New equipment debuts at Canada's Outdoor Farm Show pg 6
- Heads-up on cap and trade pg 8
- Focus: Greenhouse innovation pg 12



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#### KAREN DAVIDSON

Make peace with parsnips. The pale cousin to the carrot is no longer getting short shrift at farmers' markets or restaurants. The rising popularity of the root vegetable along with such standards as beets is causing some farmers to think about planting a few more acres.

John and Cristina Hambly have kept parsnips in their 850-acre crop rotation for many years. With 38 acres under cultivation near Bradford, Ontario, parsnips aren't a hassle to grow. They adapt to both muck and mineral soils. Three years ago, the farm turned to newer hybrids from Norseco that are longer than the traditional short and stubby varieties. Yields are expected to be in the range of a thousand 25-lb bags per acre.

Parsnip (*Pasfinaca sativa*) looks similar to parsley for a good botanical reason. It's a

member of the parsley family which includes carrots and celery, all of which make good friends in a soup or stew.

"Parsnips are a staple for us," says Cristina Hambly. However demand can be spotty. Last year, the U.S. sold out of parsnips and pulled crop from Canada, supporting high prices. But this year, it's a more normal season. Old-crop parsnips will be cleared out of 32°F. storage just as the new crop is harvested in late September and early October.

Gwillimdale Farms sell to the Ontario Food Terminal and large retailers, with 35 per cent of the crop exported to the United States. Parsnip demand peaks at Canadian Thanksgiving, American Thanksgiving, Christmas and surprisingly St. Patrick's Day.

Two thousand miles away, Pete Schouten is pleasantly surprised at the success of his parsnip acres near Surrey,

British Columbia. Since 1920, Heppell's Potato Corporation has reinvented its farming business throughout the generations. In the last three years, Schouten and his partners have made parsnips popular again – as handcrafted chips under the trademark Hardbite.

"We had totally gone out of growing parsnips because there was too much on our plate at potato harvest," says Schouten. "Now we're growing our own parsnips and sourcing from other British Columbia farmers, the prairies, Ontario and beyond to fill the demand for our chips. The parsnip market has spiked with the entry of a couple big grower names in North America."

The growth of the processing business has taken the farm by surprise. They are experts in potatoes and operate British Columbia's only potato chip factory, but no one foresaw how quickly the line would expand.

The entry of parsnip, beet and carrot chips – a savoury snack – has hit a sweet spot with consumers craving all-natural, healthy ingredients.

Schouten admits that the learning curve has been challenging. Potatoes and parsnips aren't equal when it comes to making chips.

"The more sugar in a parsnip, the easier it burns when frying" he says. "We are still figuring out the best balance between sugars and starches for batch frying parsnip chips. What we know about the specific gravity of potatoes doesn't translate into an equal swap with parsnips."

Specific gravity, an expression of density, is a commonly accepted barometer of potato quality. The number correlates to the starch content and the percentage of dry matter of the tuber.

Continued on page 3

## AT PRESS TIME...

### The Royal celebrates the Yukon Gold potato



The 94th annual Royal Agricultural Winter Fair opens November 4 at Enercare Centre, Exhibition Place, Toronto. New for 2016, Ontario Potato Growers and the University of Guelph are funding a special exhibit to commemorate the 50th anniversary of the release of Yukon Gold potatoes, which were developed at the University of Guelph. Look for the exhibit in the horticulture display area.

As usual, The Royal's Horticulture Committee will create a display of award-winning produce for the public to view. There are some special vegetable classes this year that qualify for additional prizes. The feature vegetable is white or yellow vegetable marrow. The feature giant vegetable (by weight) is turnip. Another special for 2016 is any giant vegetable carved like a jack-o'-lantern. Entry deadline for horticulture is October 11. For complete entry details, go to The Royal's website: [exhibitor.royalfair.org](http://exhibitor.royalfair.org)

### What does Bayer's purchase of Monsanto mean?

European-based Bayer is buying American-based Monsanto for \$66 billion. The merger, announced September 14, 2016, combines Bayer's crop protection line -- extending across major crops in all key geographies -- with Monsanto's leadership in seeds and traits and its Climate Corporation platform. The combination makes the new company a market leader in North America, Europe and Asia.

"The agriculture industry is at the heart of one of the greatest challenges of our time: how to feed an additional three billion people in the world by 2050 in an environmentally sustainable way," says Liam Condon, member of the Board of Management of Bayer AG and head of the Crop Science Division. "It has been both companies' belief that this challenge requires a new approach that more systematically integrates expertise across seeds, traits and crop protection including biologicals with a deep commitment to innovation and sustainable agriculture practices."

The combined agriculture business will have its global Seeds & Traits and North American commercial headquarters in St. Louis, Missouri, its global Crop Protection and overall Crop Science headquarters in Monheim, Germany, and an important presence in Durham, North Carolina, as well as many

### Agrochemicals

The six giants in the sector

Group Division	Turnover (billions of €)
Monsanto	13.52
Syngenta	12.09
Bayer CropScience	10.37
DuPont Agriculture	8.83
BASF Agricultural Solutions	5.82
Dow Agricultural Sciences	5.75

Source: Annual figures, 2015

Source: Agence France-Press

other locations throughout the U.S. and around the world. The Digital Farming activities for the combined business will be based in San Francisco, California.

From a general horticultural perspective, remember that both companies have seed divisions. Monsanto's DeRuiter seeds is well recognized for its greenhouse tomato breeding while Bayer's Nunhems seeds is respected for its greenhouse cucumber varieties. In fact, Nunhems sells 120 seed varieties across 25 vegetable crops. A year ago, Nunhems bought Seedworks India for its genetics in tomatoes, hot peppers, okra and gourds. The strategic acquisition signalled Bayer's intentions for more growth in Asia where more than 50 per cent of the globe's population resides.

If the deal passes muster with antitrust regulations, the closing is not expected until 2017.

## NEWSMAKERS

The Dispute Resolution Corporation and Canadian Produce Marketing Association (CPMA) recently held a joint event in Ottawa, hosting 23 embassies and 11 industry representatives. Ambassadors, High Commissioners and Agricultural Minister-Counselors received information on how their vendors can be export-ready, particularly in filling gaps that Canadian producers can't fulfill in off-season. Country delegations are encouraged to participate in CPMA's upcoming trade show to be held in Toronto May 9-11, 2017.



L-R: Sam Silvestro, Walmart Canada and CPMA chair; Fred Webber, Dispute Resolution Corporation; Tanya Sefolo, minister plenipotentiary, South African High Commission.

At the recent convention of the Quebec Produce Marketing Association (QPMA), the executive committee was announced for 2016-2017. Board president is **Roland Lafont**, Vergers Saint-Paul; first vice-president is **Francis Bérubé**, Sobeys Quebec; second vice-president is **Dino Farrese**, Bellemont Powell; past president is **Stephan Schmekel**, Fresh Del Monte Produce (Canada). **Sophie Perreault** is chief executive officer, QPMA.

Felicitations to **Michel Levac** (Bellemont Powell) who was declared 2016 Pillar of the Quebec Industry for his personal qualities and professional contributions throughout his career.



L-R: Stephan Schmekel (Board President for 2015-16), Roland Lafont (Board President for 2016-17), Michel Levac (2016 Pillar of the Industry in Quebec)

Congratulations to **Jodi and Adrian Roelands**, founders and owners of Roelands Plant Farms Inc., named Ontario's 2016 Outstanding Young Farmers. They operate a greenhouse in southwestern Ontario near Lambton Shores where they custom grow premium cucumber, tomato and pepper seedlings for sale to vegetable production greenhouses. It's one of only seven operations of its kind in North America.

**Summerland Varieties Corporation** has launched a new website: [www.summerlandvarieties.com](http://www.summerlandvarieties.com). Also look for their Facebook at [www.facebook.com/summerlandvarieties](http://www.facebook.com/summerlandvarieties) and on Twitter at [www.twitter.com/SVCVarieties](http://www.twitter.com/SVCVarieties).

Congratulations to **Super Farms Potato Ltd** of Saint-André, New Brunswick, who was named 2015-2016 McCain Champion Potato Grower for Grand Falls. **Jean-Guy Levesque**, with sons **Jules** and **Luc**, and grandson, **André** received a trophy, a \$1,000 cheque and an all-expenses-paid trip for two to a destination of choice. The Levesque family has been contracting with McCain for 43 years and has been in the Top 10 thirteen times, but this was their first time winning the Champion Grower title.

The third annual Yield Contest Award winner was **Les Fermes Bernard & Gérard Levesque**, with a yield of 525 cwt/acre. The runner-up was **Luc Ouellette & Fils**, coming in at 483 cwt/acre. This award is given to growers who produce the highest-yielding fields and share best management practices with the grower group.



Farm Credit Canada, the Grape Growers of Ontario and the Niagara Grape and Wine Festival have announced that **Jamie Quai** of Quai du Vin Estate Winery, St. Thomas, has been crowned 2016 Grape King. The Quai family is in its third generation of grape growing in Elgin County since 1972. The award honours his expertise of vineyard management and vineyard quality of 22 acres.

Best wishes for a happy and healthy retirement to **Pam Fisher**, berry specialist for the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) based in Simcoe. After 34 years with the ministry, in several ag-related positions, her last day is October 31. **The Grower** extends its thanks for her coordination of the bi-monthly Berry News which is enjoyed all across the country.



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#### Representatives

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North & South shores of Montreal

**Michel Gratton**

[mgra@norseco.com](mailto:mgra@norseco.com)  
☎ 450 781-6045 | 📞 450 682-4959

North & South shores of Montreal

& Manitoba

**Gilliane Bisson**

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COVER STORY

# Savoury vegetable chips have hit the sweet spot with consumers



## LIGHTLY SALTED PARSNIP



We know, parsnips have a bad rap—and it's your mom's fault. But this cream-coloured, carrot-like veggie just got a whole lot cooler. We've cooked up a light crunchy snack that takes this sweet, under-appreciated vegetable and makes it something to write home about. So eat your parsnips, your mom will love it.

Available Sizes: 150g

**Our Delicious Ingredients**  
Parsnips, non-hydrogenated sunflower oil and/or non-hydrogenated canola oil, sea salt.

Full Nutrition Facts:

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- SMOKY BBQ
- SEA SALT & PEPPER
- ROCK SALT & VINEGAR
- KETCHUP
- ALL NATURAL



FRESH FROM THE FARM



Pete Schouten, Heppell's Potato Corporation, is pleasantly surprised at the success of Hardbite chips.

used: parsnips, non-hydrogenated sunflower oil or non-hydrogenated canola oil and sea salt. As the product label explains, "no artificial anything" is used. The line has expanded to include carrots and beets.

These farmer-grown, farmer-owned handcrafted chips have commanded respect at leading trade shows in North America. The 18-carrot gold chips won the Innovative New Product Award at the Sweets and Snacks Expo in Chicago this past May. The Drop Mad Beets chips won New Product Award recognition from the Retail Council of Canada in 2015. The publicity has helped propel the brand into health food outlets and Bulk Food stores across Canada and the United States.

The premium brand also commands a price: \$4.49 retail for a 150-gram package. For those who want gluten-free,

cholesterol-free, transfat-free, GMO-free, there's a higher price point.

What does the future hold in this exploding business? "We plan to continue innovating," says Schouten. "We have a couple new flavours to introduce as well as new products."

The biggest news is a 33,000-square-foot facility is opening for its first run of vegetable chips this fall on the Surrey home farm. The biggest challenges now are twofold: procurement of enough raw product to keep the factory buzzing and managing the batch-frying process in a way that guarantees a consistent taste and texture at a winning price point.

As the adage goes: if you build it, they will come. In this case: if you build a vegetable chip, consumers will bite. Hard.

Continued from page 1

If parsnips are destined for frying, then storage conditions must also be adjusted to a bit under 43°F., a little warmer than table parsnips or other root crops. These findings, along with others, have made the processing enterprise anything

but smooth. With potatoes, processors expect to recover 34 per cent of finished product from one pound of raw product. That ratio is still an aspirational target with parsnips.

Observations in the frying plant have led to different agronomic decisions in the field. With the help of Norseco seed company, Schouten has

changed from tablestock to processing varieties of parsnips.

"We want a fatter parsnip, not a leggy parsnip," explains Schouten, "with fewer whipper tails."

The fat parsnip is important when batch frying. The goal is to have a more consistent cut and thickness to make the best chip. Only three ingredients are

INTERNATIONAL

ASIA

### 51% of global population lives in Asia



Millions -- no billions -- of people live in Asia. The circle on the global map encompasses China, India, Indonesia, Bangladesh, Japan, Vietnam, the Philippines, Burma, Thailand, South Korea, Nepal, Malaysia, North Korea, Taiwan, Sri Lanka, Cambodia, Laos, Mongolia, and Bhutan. More than 51 per cent of the global population of 7.4 billion lives in these countries.

The global population is expected to grow to 8.4 billion by mid-2030 and 9.6 billion by mid-2050. In the short term, the questions must be about water supplies and what export food opportunities are in store for Canadian farmers.

Source: Hortidaily.com

FLORIDA

### PMA expects largest Fresh Summit expo

The Produce Marketing Association's (PMA) 2016 Fresh Summit Convention & Expo will deliver the largest Fresh Summit ever with more than 1,100 exhibitors when it convenes in Orlando Florida from Oct. 14-16.

The program is organized into communities of interest including: science and technology, industry talent, floral issues, leadership and global connections.

General session topics include innovation, personal branding and PMA's annual state of the industry. Sixteen workshops will help attendees find solutions to industry challenges including talent, developing effective marketing strategies to increase consumption, demonstrating best food safety practices, using technology to increase transparency and more.

Source: FreshPlaza.com

CHINA

### One-bite watermelons spark demand



A thumb-sized watermelon called 'Pepquino' is causing a stir in China where it's grown near Hangzhou and Shanghai. Originating in South America, its uniqueness is not only its size but high nutritional value and flavour.

Similar to regular watermelon, it has a soft and tender peel. Its inner fruit flesh is bright green, tasting something akin to a crisp cucumber.

Nutritionally, these watermelons are a rich source of vitamin C, potassium and magnesium. When ripe, it has a sweet-and-sour taste. One variety smells like banana and lime.

Source: FreshPlaza.com

CALIFORNIA

### New riced cauliflower gets rave reviews



If cauliflower is the new kale, then riced cauliflower may vault the cruciferous vegetable into a new era of popularity. Gold Coast Packing has launched California Snow as a versatile, gluten-free product that can be cooked as rice or substituted for mashed potatoes or pizza crust.

While there was a supply shortage earlier in the year, the company has recovered its momentum and is handling more volume. The trade-marked product comes in one-pound bags and has a shelf life of 16 days.

Source: FreshPlaza.com

## CROSS COUNTRY DIGEST

## NOVA SCOTIA

## SweeTango “club” apples do well for Scotian Gold Cooperative

Move over McIntosh. SweeTango apples are taking up more space at retailer counters for its complex taste of citrus, honey and spice. The new tag line is “free the crunch.” SweeTango is unique in that the eating experience comes with a crisp bite through a thin skin that is unlike any other apple on the market.

Harvest has begun in Nova Scotia’s Annapolis Valley where they are grown for premium retail prices of \$2.99 per pound. Select chains in Atlantic Canada through to Ontario will be

carrying SweeTango in varying tray sizes and bags including two-pound pouches. Depending on volumes, the crop lasts until December.

“Fruit size is down a little due to drought, but the colour will be exceptional,” explains David Parrish, CEO, Scotian Gold Cooperative Ltd., Coldbrook, Nova Scotia. “We’re not sure why SweeTango is colouring so well when other varieties are green as grass. Brix levels will be higher than last year. We start picking at about 14 brix.”

The premier apple requires a lot of orchard stewardship. The variety has a tendency to get rust in the early spring and it doesn’t grow as big as Honeycrisp, so it’s important to finetune the crop load. Once picked, it stores well.

About 30 Nova Scotia growers have the rights to grow SweeTango and plan more plantings in 2018.

“The apple industry is riding a wave of optimism right now,” says Parrish.



## MANITOBA

## Vegetable variety and yield research boosted on Winkler site

The Canadian and Manitoban governments are investing more than \$210,000 in a new vegetable research site near Winkler, focused on improving yields, developing

new varieties and creating opportunities for potato, sweet potato and carrot growers. The joint announcement came from federal agriculture minister Lawrence MacAulay and

Manitoba agriculture minister Ralph Eichler on August 29. Funding will be provided through Growing Innovation – Capacity Knowledge and Development to support



Tracy Shinnars-Carnelley, director of research and quality enhancement, Peak of the Market (L) explains current research trials to Manitoba’s minister of agriculture, Ralph Eichler.

research focused on:

- nutrient and pest management for potatoes;
- new varieties of sweet potato that are better suited for Manitoba’s shorter growing season; and
- variety evaluation and crop management techniques to improve quality and yield for carrots.

The research site will be operated by Peak of the Market, a grower-owned cooperative responsible for selling Manitoba’s fresh market potatoes and other vegetables. The company will contribute more than \$477,000 toward this three-year research project.

“We appreciate working in partnership with government, which will allow us to continue

to build the industry,” said Keith Kuhl, chair, Peak of the Market and president of Southern Potato. “New crops and varieties are a key component to ongoing success.”

Canadians are eating more sweet potatoes and demand has increased by 83 per cent over the last 10 years. Most are currently imported from the United States. Manitoba growers have found the growing season to be too short to successfully grow available varieties.

Manitoba farmers grow more than 9,000 acres of fresh market potatoes and 600 acres of carrots for Peak of the Market every year. The company and its growers employ more than 1,000 people in Manitoba.



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CROSS COUNTRY DIGEST

BRITISH COLUMBIA

# Grape harvest is in full swing

According to the BC Wine Institute, BC's cool-climate grape crop is on track for another excellent vintage this year. Hot and dry conditions in the spring led to the earliest bud break on record and the earliest harvest ever for some wineries in the Fraser Valley, Vancouver Island and the Okanagan. The low average temperatures and high rainfall allowed BC grapes to have more time to ripen on the vine and to accumulate flavour and aromatic compounds. This contributes to wines that are fresh, complex and balanced with higher acidity that make them versatile food pairings.

### On Vancouver Island

Bailey Williamson, winemaker for Blue Grouse Estate Winery in Duncan on Vancouver Island, is expecting another excellent harvest at the Cowichan Valley estate. A strong growing season in April and May, followed by a cooler June and July than the previous year, led to an elongated flowering and fruit set cycle and allowed the grapes to mature and ripen to classic levels. The Blue Grouse harvest started on September 10, beginning with the popular Siegerrebe, an aromatic white varietal which tends to ripen earliest. After that, there will be a breather in harvest until the end of September, when the rest of the grapes will be harvested in earnest. Compared



Abbotsford's Singletree Winery

to all the vintages since 2012, this year's harvest started within a week of normal.

### In the Fraser Valley

Conditions on the mainland were similar to Vancouver Island. Andrew Etsell, general manager and viticulturist of Singletree Winery in Abbotsford notes that with the warm and dry August, the grapes developed beautiful flavours with balanced acids and sugars. Singletree began its harvest on August 25 – one week earlier than 2015, and the winery's earliest harvest on record. "We started with our Siegerrebe, which is evolving into one of our most popular wines," Andrew shares. "We're also keeping a close eye on our estate Pinot Noir, which we have just harvested for our first-ever estate sparkling wine. Other estate varietals, such as our Pinot Gris, Chardonnay, Gruner Veltliner and



Serendipity Winery's estate vineyard, Naramata

Sauvignon Blanc, will follow after that. This year's harvest will not yield as much fruit as 2015, yet the fruit will be clean and very high quality.

### In the Okanagan – Naramata Bench

After an unseasonably warm spring, followed by an early summer, Serendipity Winery's Katie O'Kell was concerned that the harvest would take place much earlier than normal at her estate Naramata vineyard. However, the cooler, wetter weather moved in, which allowed the grapes to mature at a more moderate pace.

Serendipity's harvest started on August 29 with Chardonnay and Pinot Noir and continued on August 31 with Viognier. With a dry and cool climate, the phenolics (flavour and aromatic compounds) will eventually catch up to the brix (a measure of potential alcohol) that



Evolve Cellars in Summerland

is currently sitting in the low 20s.

### Okanagan South

Likewise, Lawrence Buhler, director of winemaking for ENCORE vineyards, which produces wines under the TIME Winery, Evolve Cellars and McWatters Collection labels, is also in the middle of an active harvest. Compared to last year, Buhler and his winemaking team saw a two-day early start to the season on August 17. Harvest has almost been completed for the still whites, with additional harvests to take place in September for red varietals.

Regarding the balance of the 2016 harvest, Lawrence says the reds are maturing well and the cooler weather is excellent for proper fruit development and sugar accumulation in the berries.

Source: Town Hall Brands news release

# CATCH IT

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## CANADA'S OUTDOOR FARM SHOW

## Right-sized equipment appeals to specialty commodities

KAREN DAVIDSON

Canada's Outdoor Farm Show has a reputation for acres

of iron, showcasing equipment that's large, larger and super-sized. But that generalization would be unfair to the many dealers who demo equipment that's right-sized for specialty markets. Here's a rundown of

three manufacturers who brought new tools to the 2016 edition of the show.

Mark your calendars for September 12-14, 2017.

## Kubota introduces M4 Narrow tractor

Kubota Canada Ltd. had a cornerstone presence at this year's show with its permanent event centre and a ride n' drive area. The company introduced its M4 Narrow tractor whose versatile design makes it ideal for orchards and vineyards or in snow removal operations.

Martin Carrier, product manager, agricultural division for Kubota Canada Ltd., explained that the M7040 and 8540 tractors have been retired, with 70 and 85 hp respectively. The new tractor is truly narrow at 48 inches, with horsepower options of 72.6, 95 and 108 hp. The tractor with the most horsepower can easily handle

spraying in the hilly terrain of British Columbia.

The redesigned cab promotes operator efficiency with all main controls on the right side of the operator while the steering wheel has 40 degrees more tilt. Dual side mirrors and an easy-access fuse box are standard. Inside the cab, the semi-circle layout of functions is helpful to high-density orchardists.

The transmission has 12 gears with options for 24. High productivity requires versatility, such as traveling at low or sustained speeds. This tractor's transmission has 12F x 12R speed, with six speeds in two

ranges. Growers who travel from two to seven mph and have only three gears will appreciate the versatility of this new tractor.

Of note is that the corporate entity of Kubota purchased Great Plains Manufacturing in Kansas earlier this year. John Ferguson, a territory manager for the Land Pride line in Ontario, explains the significance to the horticultural sector.

"Food plot seeders are available with small discs, a spreader and harrow to plant all in one pass," he says. "This equipment will be of interest to market gardeners."



The M4 Narrow Tractor was launched at the Kubota Canada Ltd permanent event centre at this year's edition of Canada's Outdoor Farm Show, Woodstock, Ontario.

## Garlic-EEZ eases planting

As a garlic grower, Ken Hunt's least favourite time of year is planting. The Dundalk, Ontario farmer has 2.5 acres in production and is planting another acre this month. So he and a friend fabricated a new machine to reduce the back-breaking labour.

"As a lover of garlic and a garlic grower, I just couldn't seem to plant enough cloves in a day," says Hunt. "After a few days on my hands and knees, I

thought there should be an easier way to plant. As this machine came together and the prototypes worked out better, we were planting up to 2,400 seeds per hour and in a regular eight-hour day, 20,000 cloves. That is about 250 to 300 pounds of garlic seed per day."

The unit is ground-driven, has an adjustable planting width made of solid steel and weighs between 400 and 500 pounds. It operates with a small or large

tractor on a three-point hitch.

As Hunt explains, Garlic-EEZ is aimed at the market gardener to medium-sized grower. The planter, priced at \$3,650, may also be used to plant other root crops and seeds. An undercutter attachment is also available to make garlic harvesting easier. For more information, go to [www.garlicplanterequipment.ca](http://www.garlicplanterequipment.ca).



## DAVID'S SUCCESS STORY: HOW HE BETTER MANAGED HIS IRRIGATION SYSTEM

## Soft fruit grower improves yield and saves water with new sensors

**Problem:** David Green has 6 acres of peach orchards in a small valley in Southern Ontario. Although David had a drip irrigation system, he was **never quite sure** if he was **over-watering** or **under-watering**. He also didn't have time or money to install a complex soil measurement system and figure out soil readings on a computer.

**Solution:** David installed ConnectedCrops™ wireless soil sensors. He was able to easily install, the sensors at the top and bottom of the root structure. The sensors reported volumetric water content (VWC) readings to his smart phone **over the internet**. He got alerts via **text message** for: **frost alerts**, **high & low temperature alerts**, and **high & low soil moisture alerts**.

**Impact:** The ConnectedCrops™ app showed David exactly how much water the soil retained after a rainfall or irrigation run. This **eliminated the guesswork** and he was able to modify the irrigation schedule based on real-time data. In the first season, he determined that he was running the irrigation system too often. He changed his schedule and saw big improvements in yield while saving water.

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## Heartnut Grove launches Polyplanter Jr.



The Polyplanter Jr. is ideal for market gardeners says Bob Walker of Heartnut Grove (HG) located in Mount Brydges, Ontario. Its U.S. manufacturer says the device operates much like a water-wheel transplanter making it simpler than seeding by hand. It comes complete with a full range of 10 disks for different-sized vegetable seeds offering versatility to a wide range of growers.

"This adaptable machine can plant coated lettuce seed up to

as large as a lima bean," says Walker.

It's designed to seed anywhere between five-inch and 25-inch plant spacings. The beaks are adjustable. It's a push planter, making it portable and ideal for small plots of land.

"There are more market farmers and organic farmers all the time," says Walker. "This 'farmer's friend' is a real show special at \$499."

For more information, go to: [www.heartnutgrove.com](http://www.heartnutgrove.com)

## BERRY NEWS

## Vote to be held to form Berry Growers of Ontario

KAREN DAVIDSON

Between October 31 and November 14, about 700 growers of highbush blueberries, raspberries and strawberries will be receiving ballots to vote on an amalgated Ontario association. It's an important step to organize an industry with annual farmgate sales of \$30 million. The vote, conducted by the Ontario Farm Products Marketing Commission, must garner a positive response from two-thirds of the producers who vote and they must represent at least 50 per cent of the eligible acreage of those producers who vote.

The outcome of the vote is a first step in gaining support of the Ontario Farm Products Marketing Commission, the Minister of Agriculture, Food and Rural Affairs and ultimately, the Ontario government.

Details were shared by Jenn Van deVelde, past president, Ontario Berry Growers' Association (OBGA) at a September 13 end-of-summer tour at Barrie Hill Farms. Contrary to some perceptions that Berry Growers of Ontario would be a marketing board,

Van deVelde stressed that it would not have pricing powers.

Producers would self-assess their bearing acreage once each year by March 1 by completing an online declaration. Based on the reported bearing acres, growers would be assessed \$250 as a minimum license fee for any combination of acreage of the three crops between two acres and up to five acres. Each additional five acres would be assessed a license fee of \$50 per acre. Random audits would be conducted annually by a third party.

Based on current knowledge of bearing acres, Van deVelde estimates that annual license fees would total about \$177,400. That figure represents 0.6 per cent of total farmgate sales. The proposed association has three priority areas for the monies collected: market development and promotion, research and government relations. It's anticipated that about \$70,000 would be earmarked for marketing/promotion and research. By pledging its own research funds, the association would be eligible for matching government funds in some programs.

The proposal suggests a

nine-member board of directors. Initially, the Farm Products Marketing Commission would appoint the first board and thereafter growers would elect their representatives for the crop that they grow. There would be three growers of blueberries, three growers of raspberries and three growers of strawberries. A nominating committee would ensure balanced geographical representation.

Directors would be elected to three-year terms with initial terms being staggered so that three directors expire in any given year. A chair and vice-chair would be elected by the board. Kevin Schooley, current OBGA manager, would be the senior staff person of the new organization, offering continuity with his network, skill and experience.

A commodity-specific committee for each berry commodity would be established to advise on research and marketing requirements and funding allocations. Funding for research and promotion would be based on the percentage of dollars collected for each commodity.

If the proposal goes forward,



it is expected that the Ontario Berry Growers' Association and the Ontario Highbush Blueberry Growers' Association would transfer their residual net assets to the new umbrella organization and then dissolve both predecessor organizations. Strawberry growers would no longer be required to pay a check-off based on their plant purchases to OBGA.

Both founding organizations recommend that there is

considerable benefit to combining forces and recommend a 'yes' vote. If anyone does not receive a ballot by the end of October and wants to vote, contact Laurinda Lang, Ontario Farm Products Marketing Commission, at 519-826-3242. Complete information is available in the growers and members section of the OBGA website:

[www.ontarioberries.com](http://www.ontarioberries.com).

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## Lost and found: carbon, cap and trade



**JAN VANDERHOUT**  
VICE-CHAIR, OFVGA

By now, most of us have heard something about the impending cap and trade program that will be implemented in Ontario on January 1, 2017, but how about the details of that program? Any idea about what challenges or opportunities cap and trade will present on your farm?

Likely you know very little with any degree of certainty and you are not alone. There is no doubt you will be paying a few cents more for a litre of gas and diesel fuel. If you use natural gas, you will also pay a few cents more per m3 or almost a dollar per G1 for cap and trade. All fossil fuels will be taxed at the same rate per unit of carbon they produce. Sad news, too, that we are told not to expect

offset credits for any “normal agricultural production practices.”

There are a number of aspects of the current climate change programming that may provide some relief to agriculture. We have been promised that agriculture in and of itself is exempt, though this is a small consolation as exemption is only provided for methane and other greenhouse gases produced in agricultural processes and not for the combustion of fossil fuels in agricultural production.

Another potential positive is that forests and grasslands that are established with a commitment to remain in place for a number of years – 100 years has been speculated – could possibly be eligible for offset credits. Exactly how that will work is not clear at this time. Given the low emissions profile of Ontario electricity, there is not expected to be any cap and trade-related increases associated with electricity use. And lastly, the government has committed to use the profits accrued from the cap and trade program to fund the Climate Change Action Plan, which aims to help with the transition to a low-carbon economy.

Expanding on the concept of offsets, there may be offsets available for operators who can

sequester carbon in the soil, prove that it is real, enforceable, permanent, quantifiable, additional, verifiable and unique and go through the process of applying for the credits. Another hope lies in the transition away from fossil fuels to electrically driven energy uses such as geothermal, heat pumps and electric vehicles. A producer’s decision to switch to these technologies would, at the farm level, need to be economically driven taking into consideration the financial assistance provided by the Climate Change Action Plan as well as the price of electricity. For greenhouse growers, there may be some relief offered to those who invest in energy curtains or condensers on boilers unless that is considered business as usual. We can hope.

All of this is to be done in conjunction with Quebec, California and Mexico. I read recently that Mexico has credits it is willing to sell. Our provincial government has chosen to follow the California model closely to make carbon trade between the two jurisdictions simpler even though California has recently faced its own challenges which certainly puts into question the feasibility of the current model. Let’s hope they figure it out by

January 1.

That really brings me to the point I want to make. The goal of reducing carbon emissions is not a bad idea. To reduce our dependence on fossil fuels also is not a bad idea. On these two ideas, I can concur with the province. However, I struggle intensely with understanding how the current cap and trade model will realistically achieve its targets without driving businesses out of the province or out of business altogether. I ponder to no avail how adding costs to the consumer, who ultimately must pay, will be a positive impact on the environment.

Our current production standards are some of the best in the world in all respects including environment, food safety, labour conditions, pesticide regulations, etc. and yet still Ontario’s farmers face increasing bureaucratic and social pressure to demonstrate their commitment to food security. While Ontario’s farmers support creating a sustainable and secure food source, this increased level of regulation comes at a cost and the use of a carbon pricing model applied unilaterally to nearly all farms will only serve to add to this cumulative burden.

The silver lining of this current program may hinge on what the provincial government does with all the money collected under cap and trade. Will it all go to subsidizing electric cars, geothermal and public transit or will there be consideration for the food producers, the farmers that feed people? This issue is a very difficult one because of the amount of environmental passion that is driving it but we must do our best to impact the regulations around cap and trade before it is too late and we are forgotten.

You can make a difference by supporting your ag organization through this process. Encourage the representatives of the Ontario Federation of Agriculture or Christian Farmers Federation of Ontario to continue to dig in on the issue. Support your ag organization and its staff as they try to navigate the mountain of upcoming carbon regulations. The Ontario Fruit and Vegetable Growers’ Association is working on this issue, along with the Ontario Greenhouse Vegetable Growers and others to find some potential glimmer of opportunity in what currently seems so dark a challenge.

## WEATHER VANE



According to The Weather Network, Kamloops, British Columbia took top spot for the most days above 30°C this past summer: 37. Toronto, Ontario came a close second with 33 days. Those statistics are no surprise for Ontario grape growers who relished the sunny days and now look forward to harvesting a superlative vintage. Richie Roberts, winemaker at Fielding Estate Winery, moves totes of grapes to the crush pad at Lincoln, Ontario. Photo by Glenn Lawson.

**STAFF**  
Publisher: Ontario Fruit and Vegetable Growers’ Association  
Editor: Karen Davidson, 416-557-6413, editor@thegrower.org  
Production: Carlie Melara, ext. 221, production@thegrower.org  
Advertising: Alex Nichols, 519-763-8728 x 218, advertising@thegrower.org

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

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THE GROWER

## PERSPECTIVE



## Guelph readies to become the Silicon Valley for agriculture and food



**OWEN ROBERTS**  
U OF GUELPH

The huge federal funding announcement at the University of Guelph in September, for a seven-year, \$77-million initiative called Food From Thought: Agricultural Systems for a Healthy Planet, is being heralded as a turning point in Canada for the next agricultural revolution – the digital revolution – which will be driven significantly by the coming together of big data and modern farming.

In fact, the university's scientific lead for the project, Guelph Food Institute director Prof. Evan Fraser, says Food From Thought stands to make Guelph the Silicon Valley of agriculture and food.

Here's why.

The project builds on some assets that are uniquely the University of Guelph's, and have given it an established

platform on which to nurture such an agricultural revolution. The first asset is the partnership between the university and the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), a formal arrangement that seizes on the historic connection between the two.

The ministry dedicates millions of dollars every year -- \$54 million in 2015-16 -- to the partnership, to fund agriculture and food research and development, laboratory services and training and education at the University of Guelph. The partnership also supports the province's largest network of research stations, dedicated to livestock and field crop development, managed by the university for its researchers' use.

In 2017, the partnership will celebrate its 20th anniversary. Independent impact studies have shown it generates more than \$1 billion a year in economic activity in Ontario. The stability it gives the agriculture and food sector in Ontario helped make the pursuit of Food From Thought possible.

And so did newer assets. One that comes immediately to mind – and one that is an intrinsic part of Food From Thought -- is the Biodiversity Institute of Ontario (BIO), at whose headquarters the project's announcement was made.

BIO is home to a game-changing technology called DNA barcoding, sometimes referred to as the "Barcode of Life." DNA barcoding uses a very short piece of DNA to accurately identify a species, similar to how a supermarket scanner uses the black stripes of the Universal Product Code.

In agriculture and food, DNA barcoding has several applications. In the field, it can lead to accurate pest identification, which is crucial for farmers trying to figure out how to protect their crops and livestock from insects, bacteria and fungi. Off the farm, it can help guarantee the authenticity of Canadian exports. It can also identify problems such as pathogens or toxins earlier, and allow faster and better responses to food safety threats, protecting consumers and exporters.

The huge amounts of data being generated by BIO and other activities on campus have prompted Guelph researchers to connect with those who have supercomputing capacity, and what's called "big data" expertise. Guelph entered this field early – and uniquely, for its biological applications -- through its involvement with a supercomputing network called the Shared Hierarchical Academic Research Computing Network (SHARNET), in which Canadian universities



**Professor Evan Fraser speaks at the Food from Thought announcement at the University of Guelph.**

share and join their computing capacity.

Building on that foundation, Food From Thought has attracted IBM Canada as a key industry partner. Its role will include tools and training for data analytics, plus securing cloud-based storage for the incredible amount of information gathered through supercomputing, and from precision agriculture technology that has already started appearing on farms. Scientific director Fraser says big data "will improve the understanding of the complex interplay

between farming practices, the genetic potential of our crops and livestock, and the environment."

So now, through the Canada First Research Excellence Fund that funded Food For Thought, Guelph has a new injection of resources to support graduate students, outreach and of course a whole array of research activity.

Aggies and non-aggies can rally around this initiative with equal enthusiasm. This is our country's entry into the agricultural digital revolution.

### CANADIAN HORTICULTURAL COUNCIL NEWS

## Understanding how the regulations impact real-life horticulture

On August 17, the Canadian Horticultural Council (CHC) hosted a crop protection information tour of Quebec horticultural production facilities for staff of Health Canada's Pest Management Regulatory Agency (PMRA) and Agriculture and Agri-Food Canada's Pest Management Centre (PMC). For government staff who evaluate and regulate crop protection products and coordinate minor use pesticides, this was an opportunity to see first-hand how growers manage

horticultural crops and pests in greenhouse, orchard and field systems.

Tour participants visited the greenhouse facility of Les Serres Lefort, Ste-Clotilde, a producer of organic peppers and cucumbers and hydroponic lettuce on 12 hectares of production area. They observed the extensive biosecurity procedures which limit the introduction of pests into the facility.

Following lunch at Phillion Ecological Orchard,

Hemmingford, provided by VegPro International and l'Association des producteurs maraîchers du Québec, participants visited an apple and pear orchard to gain a grower's perspective of the impact of the proposed PMRA re-evaluation decisions, in particular, captan. This discussion was linked to post-application activities and the minimal exposure of workers in modern high-density orchard plantings.

The tour concluded at VegPro International,



**CHC's general manager Rebecca Lee (L) and CHC chair Keith Kuhl suit up at the facilities of Les Serres Lefort, Ste-Clotilde.**

Sherrington, with a visit to field production sites of young leaf lettuce ("mesclun"), onions and other vegetables. Integrated pest management was discussed including disease monitoring and forecasting based on modelling and spore trapping.

This tour allowed CHC members and staff to interact with 37 key government officials who regulate crop protection products and to discuss how regulatory decisions impact horticultural producers in Canada.

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## Who gets the last drop?

BRUCE KELLY

By the end of a hot, dry summer like that of 2012 or now 2016, we are always talking about water: do we have enough here in Ontario and who would get access when sources run short?

Weather whiplash is the only way to sum up this year and this summer. Extremely hot and dry conditions were experienced through the growing season and normal-to-above normal rains arrived more recently in August, but they came too late for many field crops.

For most vegetable growers, the recent rains bring some relief and an opportunity to catch up on some sleep after long nights of irrigation, but the financial toll on people, costs and equipment is just starting to hit home. Fuel bills, burned out pumps, reduced crop yield and challenges in maintaining quality this summer will leave many with a drought hangover they will be thinking about long into the winter.

Irrigation has been the key for many vegetable growers, but not all fields can be irrigated and many potato and tomato crops have underperformed. Berries suffered storage issues and if they were not irrigated, simply withered in the field.

After the drought of 2012, many who had not had irrigation started to invest in new systems. Many grape and apple producers added drip irrigation to new and existing acres over the last few years, and made good use of this equipment this very dry summer.

After a dry summer like this, we once again start talking about equipment types, water sources, potential irrigation projects (Niagara Region for one) water security and water-taking permits. But as yet we have not wrestled with the question of how we would allocate water, if sources are depleted. The Permit to Take Water (PTTW) process only goes so far, and cannot guarantee the water will be there when you actually need it.

In a terrible case of timing, Nestle Waters has been looking to renew some of its water-taking permits in the midst of a drought-plagued summer sparking a debate about bottled water, how much the company pays for the water and the risks to local communities.

Bottled water and where it comes from has become a lightning rod recently as communities do not think it is fair to have water removed in large quantities from their aquifer with no direct

community compensation and they wonder what risk it poses to their own local supply. Water users are either municipal, industrial, agriculture or recreation. And bottled water, although industrial in nature, is really in a category by itself and often bears the brunt of water discussions and polarized views. There are few bottler supporters, although there are lots of customers because someone is buying and drinking the water.

The Ontario government is now moving to review water use charges and bottled water is going to be at the top of the list.

While acknowledging that there is a difference between taking water for agricultural or industrial use and taking it to sell bottled water, Ontario Premier Kathleen Wynne said in August that some of the conditions of the permits for bottled water use are outdated.

"There's the issue of the quantity of water that's taken, there's the issue of the cost of that water," Wynne said.

Wynne has asked Ontario Environment Minister Glen Murray to review permit conditions for bottled water companies and determine whether there is a sufficient price on removing water.

While I am not aware of any move to change the rules for agriculture or to charge agriculture for water use (beyond those currently on municipal systems), this directive may open up discussions on how we would allocate water if the going got really tough. Ontario is blessed with abundant water resources, but in some years the timing is a little off and we will have to



face some hard decisions about allocation.

As for the fate of the water bottling industry, I suspect they will continue to be the industry we all love to hate given the cost of water is not their only challenge as an industry. Collectively, Environmental Defence and the Ontario Federation of Agriculture have recently come out with a proposal to lobby the Ontario government to implement a deposit return program for single-use plastic beverage containers which would presumably apply to water, pop

and others to help fund environmental programs.

A few resources that are of use can be found on the government's websites: "Dry Conditions and Low Water Response" and "Irrigation" are available on the OMAFRA website. "Permits to Take Water" can be found on the website of the Ontario Ministry of Environment and Climate Change.

*Bruce Kelly is environmental program coordinator, Farm & Food Care Ontario.*

## COMING EVENTS 2016

- 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 "How Green is your customer" seminar, Islington Golf Club, Toronto, ON
- Nov 4-13 Royal Agricultural Winter Fair, Enercare Centre, Toronto, ON
- Nov 11 Ontario Produce Marketing Association Gala Dinner and Awards Ceremony, Universal Event Space, Vaughan, 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 23 Asparagus Farmers of Ontario Annual General Meeting, Hungarian Hall, Delhi, 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 [info@nasga.org](mailto:info@nasga.org)
- Dec 6-8 Great Lakes Fruit, Vegetable and Farm Market Expo, Devos Place Convention Center, Grand Rapids, MI
- Dec 6-8 GrowCanada Conference, Westin Ottawa, Ottawa, ON
- Dec 7 Ontario Potato Board Annual General Meeting, Holiday Inn, Cambridge, ON
- Dec 8 CanadaGAP Annual General Meeting, Canadian Federation of Agriculture Boardroom, Ottawa, ON
- Dec 13 Fresh Vegetable Growers of Ontario Annual General Meeting, OMAFRA office, Woodstock, ON

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## RETAIL NAVIGATOR

## Thinking ahead to seasonal programs



PETER CHAPMAN

Planning for seasonal programs happens earlier than most other initiatives. Lead times are longer, especially if off shore non-food items are tied in. Retailers plan these programs at least a year in advance so you need to be thinking further out than that. It doesn't have to be the fine details but items, ideas and opportunities.

Retailers will start with the key selling seasons related to holidays. These are changing as the consumer changes. More food-related holidays are celebrated within different cultures so make sure you are educated in these. In produce the local grower program would be planned at the same time as holidays.

Once the key selling seasons are planned they will move on to the programs that are two weeks and fit them in around the big ones. Often they will start with what worked last year, plan them again and then determine where the gaps are.

Use your own calendar to predict what your customers will be doing. You should have themes from last year recorded, just as they would. Plan the year as if you were the category manager -- where are your opportunities? You might find some things they have not considered. You should also have ideas from other markets that you experienced while travelling.

Look for opportunities for your items in themes that are not specifically for produce. Tomatoes and onions for bruschetta during Super Bowl will drive incremental sales, which is the goal.

## Getting into the programs

Ask your customers for the lead times they are using to plan seasonal programs. Use these dates to determine when you need to put opportunities in front of them.

You need to be right on price but often these programs are designed to deliver sales and margin, not just sales. They will

be looking for items to round out the program and make it an event in-store.

Plan your production around the early lead times into the warehouse. Often they will ship items for a theme earlier than ads to give stores a chance to build displays and also break up the work for the store. Do not miss these deadlines! They are very important to retailers and you create a lot of extra work if you miss your commitments.

If you are working early enough you can suggest ideas to your category manager. Send them pictures of things you have seen in other markets and set them up to need your items.

Communication needs to be clear to ensure they know what they are getting and the same for you. Often these programs require products, packaging, displays that are outside regular business. It is costly if one side does not deliver.

## Check the execution

Plans are great and they need to be made, however the reality is in the store during the event. Schedule your time in the stores to understand how it looks out there for your customer and consumers. Your expectation might be different than what you see. Go early enough to impact change, if required. Communicate to your



customers, which reinforces that you are in their stores.

If you don't get the execution you want, use it as a bargaining chip next time.

If you have some ideas to make participating in seasonal programs more effective please give me a call at (902) 489-2900 or send me an email at pchapman@gpsbusiness.ca.

## WHAT'S IN STORE?

## Food is popular with the under-10 crowd

Have you heard of Shopkins? If you have kids under 10 you might have. These small plastic collectibles, shaped like food and other consumables are in stores everywhere. They appeared on the market about three years ago and they are now into what they call season five.

The product was developed and produced by a company



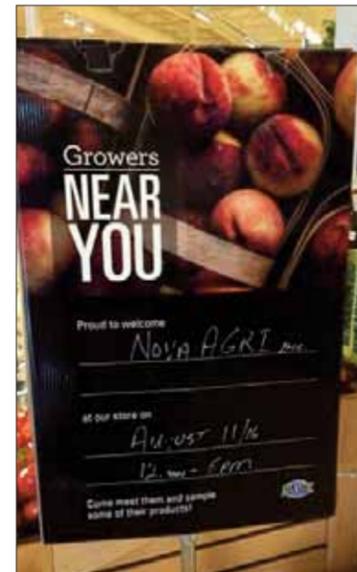
called Moose Toys from Australia. Perhaps this next generation will be trained from an early age to love shopping for food!

## THE OTHER SIDE OF THE DESK

## Loyalty programs are big business

Recently I saw this sign (above) in our local Atlantic Superstore (Loblaws). I was surprised at the dollars they have returned to consumers in this one store. According to the sign consumers have redeemed \$327,880 worth of free groceries in this store alone.

If this store averages \$450,000 per week, that is \$23.4 million per year. The free groceries are worth 1.4% to the bottom line of this store. That is a huge number in the food industry. Do you participate in the loyalty programs your



customers have? If you add in the marketing and system costs, this program is a huge investment for Loblaws. The real math is more complicated but it doesn't change the fact that you need to understand these programs and decide if you can participate. With this investment, it is big for your customers.

*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: GREENHOUSE INNOVATION

## Modern living quarters in modular housing units to attract employees



KAREN DAVIDSON

Two innovators in the greenhouse industry are piloting a new way to house employees. Paul J. Mastronardi, Golden Fresh Farms and Red Sun Farms, Kingsville Ontario have contractors putting the

finishing touches on modular houses at a new location in Wapakoneta, Ohio.

“We are setting the bar by creating an environment which creates a sense of community and home,” says Paul J. Mastronardi, Ohio greenhouse operator. “Our plans include an additional unit for our retail partners and

customers to stay while visiting on site so they are able to gain first hand insight in the total experience of our operation.”

Each modular design includes 1,134 square feet of living space complete with two living rooms, two kitchenettes, two bathrooms and four bedrooms. These new modular Vectorbloc units are

being installed by Connexio Building Systems Inc., and are making their debut in the agriculture industry with the Red Sun Farms’ Ohio expansion.

Five units are under construction with each unit having maximum capacity for eight residents. Once complete, the Ohio greenhouse and distribution center will start operating with approximately 75 employees. However, this operation has been designed to allow for growth of up to 200 acres within the next seven to 10 years, with the potential to create up to 400 jobs.

The goal is to attract employees that will be productive in the work culture offered by Red Sun Farms.

“We are always on the lookout for innovative ways to do business or grow our business,”

says Harold Paivarinta, Red Sun Farms. “When the opportunity arose to incorporate this type of housing into our new Ohio location, we were excited.”

Through factory control in the assembly process, the housing units are designed to deliver sustainability and efficiency. The result is less waste, tighter construction allowances, and ultimately a shorter construction schedule. All of these parameters ensure a timely delivery without compromising quality and comforts. The housing is LEED-certified – another plus in telling the behind-the-scenes production story.

As the pilot program unfolds in Ohio, this housing will be considered for future builds throughout Red Sun Farms’ facilities.

## Real-time environmental monitoring has multiple benefits

When Beverly Greenhouses built their two-acre propagation facility two years ago near

Dundas, Ontario it wasn’t long until Grodan GroSens monitors were installed in the stone wool

slabs. The wireless device logs data every three minutes for water content (WC), electrical



With real-time environmental monitoring, Jan VanderHout says no chemical controls have been used since opening the propagation facility two years ago. Photo by Glenn Lowson.

conductivity (EC) and temperature in the substrate. What happens in the wool substrate impacts the functioning of the root zone.

“It was a turning point for us in understanding the exponential growth of seedlings,” says Jan VanderHout. “The needs for water are immense, especially in the last week before transplanting.”

The collected data is critical in adjusting inputs for the fast-growing cucumber plants, especially since the greenhouse is built on cascading floors. The floor is not flooded but must be managed for a precise amount of water to reach the root zone. In winter, it’s easy to overwater. Too wet conditions invite

diseases such as Pythium.

Grodan, the monitor manufacturer, has introduced a web-based application which allows the operator’s smartphone to be connected to the farm’s servers. On-site or off-farm, the operator can check real-time conditions in the propagation greenhouse.

“It’s technology like this that has allowed us to control and adjust the environmental conditions within our propagation greenhouse,” says VanderHout. “We have total control over our pest control program for thrips, white flies and spider mites. We have not had to use any chemical controls since our propagation greenhouse opened two years ago.”

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FOCUS: GREENHOUSE INNOVATION

# Pilot project: Lighting in Ontario greenhouse vegetables

TODD GRAHAM

The consumer demand for greenhouse vegetables in the winter months requires the use of artificial lights to supplement the low natural light during that period. Traditional crop starting dates are in early to mid-January and terminated in late November leaving a three to four month gap when there is little or no production.

A pilot project was initiated by Ontario Greenhouse Vegetable Growers (OGVG) in cooperation with Agriculture Agri-Food Canada, Harrow (AAFC) and Ontario Ministry of Agriculture Food and Rural Affairs, Harrow (OMAFRA) at commercial vegetable greenhouse operations, to address the need for information on lighting strategies, economics and benefits for the Ontario greenhouse vegetable producer.

Seven commercial sites were selected for tomato, cucumber and pepper in glass and double

poly greenhouse structures and various light combinations of High Pressure Sodium lights (HPS) with Light Emitting Diodes (LEDs) at different combinations and light intensities were evaluated. The combinations were as follows: three tomato producing greenhouses one with glass covering with HPS overhead and LED interlighting, a poly covered greenhouse with LED interlighting (over-winter crop) and another poly covered greenhouse with LED interlighting for spring production; three cucumber producing greenhouses one with poly covering high wire cucumber with HPS overhead and LED interlighting, one with poly covered umbrella system with LED interlighting and another glass covered high wire mini cucumber with HPS and overhead LEDs; one pepper poly covered greenhouse with HPS overhead and LED interlighting with various light intensities.

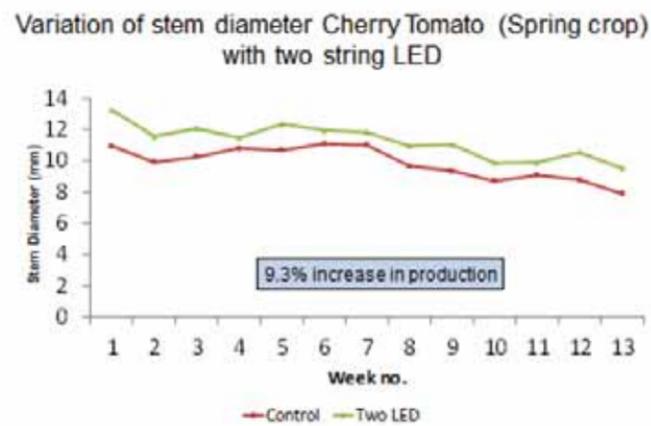
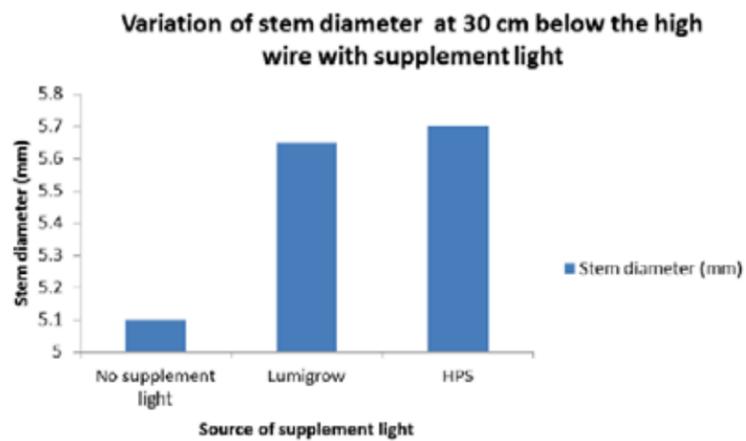
In general there was improved growth and production when light was increased with

variations depending on the crop and the level of lighting applied.

### Early Conclusions

- Interlighting with LEDs increased high wire mini cucumber yield by 22.3 per cent with one interlighting strip and 30.8 per cent with two interlighting strips
- Overhead LEDs versus overhead HPS did not show a higher production as the light intensities were not comparable although both treatments surpassed yield from no lights by >100 per cent
- Interlighting in traditional cucumber cropping had a 30 per cent increase in production
- Pepper experiment LED inter-lighting improved plant growth, fruit yield and quality compared to the top HPS treatment. As well, LED inter-lighting significantly increased fruit dry matter content and the content of health promoting compounds in fruits, including total phenolic content, total carotenoid content and antioxidant activities
- Tomato HPS lighting with LEDs interlighting increased yield but requires further studies. Summer interlighting with LEDs shows some promise
- Tomato interlighting with LEDs in February to May did show increased production but yield did not offset the increased cost of production. Further studies are necessary.

Economic analysis of the data is underway and information on



### Influence of HPS and LED lights on Pepper leaf Dry matter Content

HPS over head light (watts/m <sup>2</sup> /foot)	LED	Jan 12	Feb 23	Mar 30	May 4
		Dry matter Content	Dry matter Content	Dry matter Content	Dry matter Content
78	No	7.63	12.3	19.5	13.8
	Yes	9.99	14.2	18.1	17.6
155	No	10.5	13.2	14.8	15.1
	Yes	12.0	14.2	17.8	19.1

LED increased dry matter content of pepper leaves

the prices needed to offset the increased cost due to lighting are being established.

Dr. Todd Graham is science coordinator, Ontario Greenhouse Vegetable Growers.

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Election of Directors of the Association, discussion of financial reports and any other business that may arise will take place. Lunch will be provided. Meeting details will be posted to the FVGO website as they become available.

www.freshvegetablesontario.com

To register for the meeting please call the FVGO office, 519-674-1500 ext 63592 or email mmcdonal@uoguelph.ca

**FOCUS: GREENHOUSE INNOVATION**

# Long runner beans are a runaway success in the greenhouse vegetable mix



every crop, a little more information is gathered in order to meet the growing demands of all-season production. They have spent considerable time working with seed companies to identify the right varieties for year-round harvest.

The long runner bean differs from the more commonly known green bean. In a garden, the cotyledons stay in the ground during germination and the plant is a perennial vine with tuberous roots. The vine can grow past twelve feet in length, making it ideal for a controlled greenhouse environment. In a short timespan, the Kniaziew's have become the largest purveyors of greenhouse-grown long runner beans in North America.

"It's about the wow factor," says Jordan Kniaziew, who gets a positive response telling his story while travelling throughout airports. "Most people have never seen a bean that big, and from there, our conversation usually leads to how I like to cook them." His go-to recipe is taken from the asparagus playbook. He starts by applying a healthy coating of olive oil, a light dusting of salt and pepper and then grilling them on the barbecue and finishing them with some freshly grated parmesan cheese.

Offering a wide variety of products under the Zing! Healthy Foods brand, the Kniaziew brothers are keenly



Jordan Kniaziew, Zing! Healthy Foods, is successfully growing and marketing long runner beans in Ontario, Quebec and the north-eastern United States.

aware of how colours appeal to the diverse Canadian marketplace. Their pencil-hot peppers are gaining traction with suppliers whose consumer base lean towards a more culturally diverse food supply. Marketed as "Spice Night," the package features fine hot peppers in red,

yellow and brown colours.

"Everyone knows a jalapeno pepper," says Kniaziew, "and everyone knows a habanero, but we wanted something in-between in terms of heat. We feel we found that sweet spot, or spicy in this case," Kniaziew concludes.

KAREN DAVIDSON

The European fairy tale of Jack and the beanstalk has made its way across the pond and is becoming a Canadian success story. First-generation farmers Jordan and Duffy Kniaziew are setting the stage to market their European Runner Beans to the masses. Currently they are grown in Leamington, Ontario and

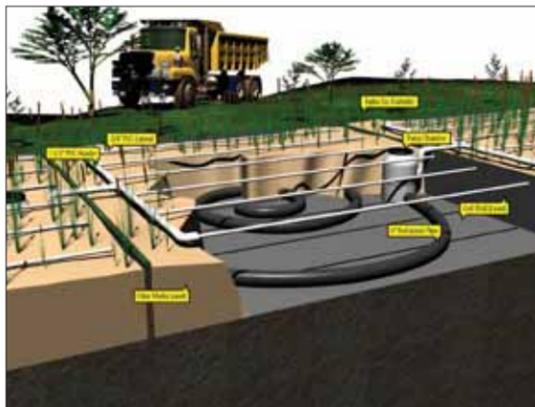
shipped to retailers across Ontario, Quebec and the north-eastern United States. Future plans are to ship throughout North America.

Since 2013, the brothers have dedicated a portion of their growing facility to research and development aside from their current allotment for market supply. Growing beans which are twice the length and size of a typical green bean has taken several years to finetune. With

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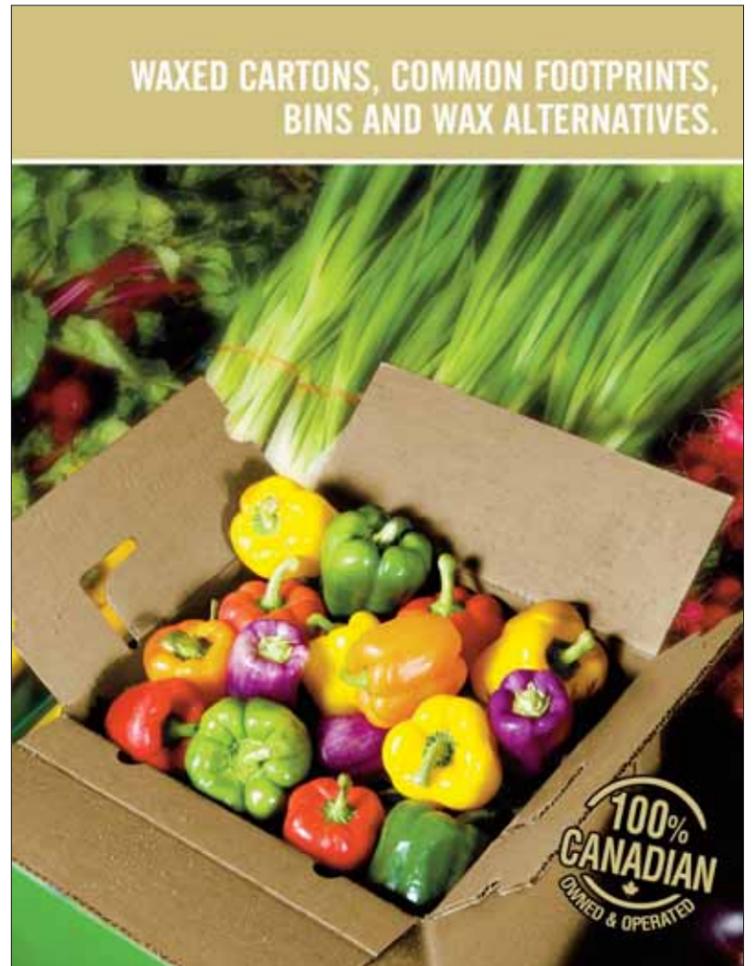
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- 1) treatment & re-use of greenhouse irrigation leach water at greenhouses in Niagara & Haldimand
- 2) treatment of winery wastewater at Greenlane Estates Winery & numerous other in Niagara
- 3) treatment of landfill leachate at sites in Pembroke,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

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## MINOR USE

## CRAIG'S COMMENTS

## Looking back



**CRAIG HUNTER**  
OFVGA

I think I was at the OFVGA for a day when then-editor Jamie Reaume 'told' me that I had to write a column for **The Grower**. Today's version represents the 200th version and a total of about 250,000 words that have 'spewed' from my scribbling pen. It has been a lot of fun along the way.

Early columns focused on the many 'wrongs' in the Pesticide world. I even got a kind of warning from a former manager that maybe I was being too negative. My response then was that since it was Canadian Pesticide issues that I was expostulating on, there were a lot of negatives to write about! Another piece of advice that I took to heart then was that in the Federal Health Minister's list of top 20 issues, pesticides ranked 47th! The only way to get his attention was a face-to-face meeting and that happened soon thereafter due to behind-the-scenes work by Jeff Wilson. One of the outcomes was the Minor Use Program, which just goes to show that tenacity can pay off.

Along the way I have been asked repeatedly about where I get the fodder to write about. Another question is often about how long it takes to write a column. The first one is easy—there are so many interesting (at least to me) things happening in the world of Horticulture and Crop Protection that I never have a shortage. I also like to add in some personal things to keep some folks off balance as they wait for my next thrust! Throughout the columns there

have been personal anecdotes, experiences and opinions that allow readers to get a better handle on who I am and what makes me tick.

The time to write a column varies from an hour to several days. I often read it a day later and start to fine tune some things. Research on numbers for accuracy of historical items is needed to augment my memory which is not infallible, and some data may take some time to track down.

In the early years I even wrote a couple of short 'stories' to augment **The Grower** at Christmas time. One was actually published and the other, a sequel, is still 'in the can.' My children still remember me telling them 'made up stories' and I guess this has carried onward. Using a story to make a point has always worked for me. Comparisons, metaphors and alliteration can be the writer's best friend at times. Dredging up old anecdotes works for me too.

The stories that have a human element seem to get the most response. I have been so fortunate to work for so many gifted people who were prepared to share their knowledge. Almost all of them have passed away, and the best way to honour them and to keep their memory alive is to write about them. The same thing goes for the members of the many organizations, committees and groups that I have had the pleasure of working with and knowing.

Just today I had a chance to talk about the old 'rules' that the Horticulture Extension Staff lived with, back in the day. Simple things included taking no holidays during the summer. That was when farmers needed us so we were expected to be on hand. Likewise, staff department was monitored and some were admonished for attire and conduct. As an example: Use of the government car went from any personal use within reason, to just use in your counties of responsibility and neighbouring



Craig Hunter testified at the Standing Senate Committee on Agriculture and Forestry earlier this year regarding crop protection issues.

counties, to just for commuting from home to the office, to no personal use whatsoever. Woe betides the staffer who used the government car (with decal to show it was a ministry vehicle) to attend an event (non-work) on a Saturday and parked it with a case of beer on the back seat wherever anyone could see it! And then there was the employee whose spouse used the government car for Saturday shopping an hour's drive from 'home' and certainly raised some eyebrows! There was another one who drove five hours away from 'home' one Friday for a personal visit and on the next day (Saturday) the car was hit by a train far from home and totally destroyed although he walked away. He was also 'covered' for that incident.

It just goes to show that there are rules for some, and loopholes for others. A lesson well worth remembering! (The above is just an example of how a simple comment can unleash a flood of carefully hoarded trivia for re-cycling!) Perhaps my favourite columns were the ones that I prepared prior to a Remembrance Day issue. Anyone who has been

reading for a while will know of my deep and abiding respect for those who have volunteered to serve our country. Often these become a family remembrance piece, but also include many others. I continually find out, usually too late via obituary, of the contributions of people I have met, but whose stories I never knew. One of the professors at Guelph whom I knew of but never had as an instructor (Tom Lane) was a POW in WWII and was in the same camp as a longtime family friend. I only found that out while chatting to him a few short years ago and Tom passed away this summer. It really struck me that he remembered and acknowledged our organization of hockey games and building of the rink at Stalag Luft III. The skates and sticks came via the Red Cross, and later the skate blades were 're-purposed' as digging tools for the tunnel used in The Great Escape, and the hockey stick handles were used on the bellows used to provide air movement in those tunnels. It just proves what a small world it really is.

I must admit that at times I may have been a tad harsh on

the Pest Management Regulatory Agency (PMRA) and its predecessor organizations. It was done solely to get attention to the problem at hand, and not necessarily meant to denigrate the efforts of the vast majority of hard-working folks in that organization. (There were a few who did deserve even more acerbity than I dished out, but they will remain anonymous as I have no wish to even credit them by repeating their names and misdeeds.) On the other hand, when I actually handed out kudos, some went to PMRA staff who went above and beyond to gain understanding of issues from a grower perspective before making a decision that would cause serious repercussions. Even when I had to 'point out the errors of their ways' I always also tried to point out we preferred to work with them, and not make it a public debate which could become a lose-lose situation.

There are still a few more columns in me, and as long as our editor sees fit to publish them you can look forward to more 'Craig's Comments' in the future!

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MINOR USE

## Copper Spray fungicide label for fireblight control on pears in Canada

Crop	Target	Rate Copper Spray Fungicide	Applications	Remarks
Pears	Fireblight	2.2 kg in 1000 L per ha	Apply when blossoms open. In case of hail damage, immediately repeat this treatment. Apply a maximum of 10 applications per year, leaving a minimum of 5 days between applications.	Do not apply on Anjou.

JIM CHAPUT

The Pest Management Regulatory Agency (PMRA) recently announced the approval of an URMULE registration for Copper Spray fungicide for control of fireblight on pears in Canada. Copper Spray fungicide was already labeled for use on a

number of fruits, vegetables, tree nuts and ornamentals in Canada and pears in British Columbia only.

The minor use project for pears was submitted by OMAFRA in 2014 as a result of minor use priorities established by growers and extension personnel in eastern Canada to expand this label across the country.

The following is provided as an abbreviated, general outline only. Users should consult the complete label before using Copper Spray fungicide.

Copper Spray fungicide is toxic to birds, small wild animals, aquatic organisms and non-target terrestrial plants. Do not contaminate off-target areas or aquatic habitats with Copper Spray fungicide when spraying



Fireblight in pears

or when cleaning and rinsing spray equipment or containers.

Follow all other precautions and directions for use on the Copper Spray fungicide label carefully.

For a copy of the new minor use label contact your local crop specialist, regional supply outlet or visit the PMRA label site [www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)

## Princep Nine-T herbicide for weed control on tree nut crop group in Canada

Crop	Target	Rate Princep Nine-T Herbicide	Applications	Remarks
Tree nuts (see label for list of crops)	Labeled weeds	2.0 – 2.5 kg	1 application in spring prior to emergence of weeds	DO NOT apply to almond, macadamia nut, pecan, filbert, or walnut trees that have been established in the grove for less than two years.

The Pest Management Regulatory Agency (PMRA) recently announced the approval of an URMULE registration for Princep Nine-T herbicide for control of weeds on tree nuts (crop group 14-11) in Canada. Princep Nine-T herbicide was already labeled for use on hazelnuts, some tree fruits, berries, asparagus, ornamentals and corn in Canada.

The minor use project for tree nuts was submitted by OMAFRA in 2012 as a result of minor use priorities established by growers and extension personnel.

The following is provided as an abbreviated, general outline only. Users should consult the complete label before using Princep Nine-T herbicide.

Princep Nine-T herbicide is toxic to birds, small wild animals, aquatic organisms and non-target terrestrial plants. Do not contaminate off-target areas or aquatic habitats with Princep Nine-T herbicide when spraying or when cleaning and rinsing spray equipment or containers. The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

Follow all other precautions and directions for use on the Princep Nine-T herbicide label

carefully.

For a copy of the new minor use label contact your local crop specialist, regional supply outlet

or visit the PMRA label site [www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)

Jim Chaput is OMAFRA's minor use coordinator.



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