

1999 • 2019

20

Better Farming

MAY 2020 | \$8

ENVIRONMENTAL
FARM PLANS

14

MANAGING PHOSPHORUS

Shared Solutions

22

INTERNATIONAL SERVICE WORK

Farmers' Efforts

30

SOIL TEST TRENDS

Shifting Values

48

PLAN FOR PLANTING

Tips for Success

52

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LETTERS FROM A FAMILY FARM OVERCOMING NEW HURDLES

For almost as long as I can remember, a rug hooking from a family friend has hung in our farm office.

The piece is a bit different than her other artwork that adorns my family's homes. In contrast to the floral designs and depiction of the farm's original log cabin homestead, this piece recreates a simple sketch.

In it, a heron has a frog in its beak. The frog is fighting back, though, with its hands throttling the heron's throat. "Don't ever give up" runs alongside the image.

Our family has referred to that rug hooking a lot over the years. Dad pointed to it when my sister Jessica or I struggled with a challenging university course. He referenced it when he shared stories of the difficulties the farm community faced during the 1980s.

I expect that some of us might benefit from that simple reminder right now.

After all, we're dealing with an

unprecedented situation.

Some of us might be struggling because we can't see extended family or friends in person. Other people might have anxiety about going to the grocery store or pharmacy.

Many of us are likely worried about the short- and longer-term effects on our farm operations. We're watching the market volatility. We're trying to develop contingency plans in case of team illnesses or labour shortages. We're stressed about cash flow.

But we're resilient and dedicated. We have a range of systems and resources in place to help us survive and, ultimately, thrive.

So, just like the previous generations that overcame challenges, we'll get through today's hurdles. We will find new ways of working together and fostering community connections. We will continue to produce our crops and raise our livestock.

Please remember to reach out to others if you need assistance or support.

We're stronger as a community.

Andrea

NOTE FROM OUR PUBLISHER PULLING TOGETHER

Our staff writer Jackie Clark wrote on Farms.com about how farmers are pitching in to help their communities in this time of pandemic and economic crisis.

Embro's Dan Veldman recently found himself with half a skid of eggs, which normally would have been donated to local schools. But problem-solving is part of the day's work for any Ontario producer – so it didn't take long for the eggs to land at area shelters and food banks.

Jackie reports how



Dan then reached out to health care workers, who were running short of protective equipment. The Veldman family donated much of their farm's supply of PPE to nurses in London, and doctors' offices around Stratford and Woodstock.

This is a family that, in more normal times, donates to food banks, shelters, retirement homes, and organizations like the Ronald McDonald House.

"You can hear it a million times, but it's true – we're all in this together," Dan told me.

"And it doesn't have to always be big gestures. Little things do mean a lot."

Paul Nolan

Better Farming

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ONTARIO'S AGRI-FOOD SECTOR RISES TO THE OCCASION

It's truly remarkable to see how much life has changed in Ontario since the COVID-19 outbreak began.

And it's equally remarkable to witness the immense efforts in adjusting to a "new normal" during a global pandemic.

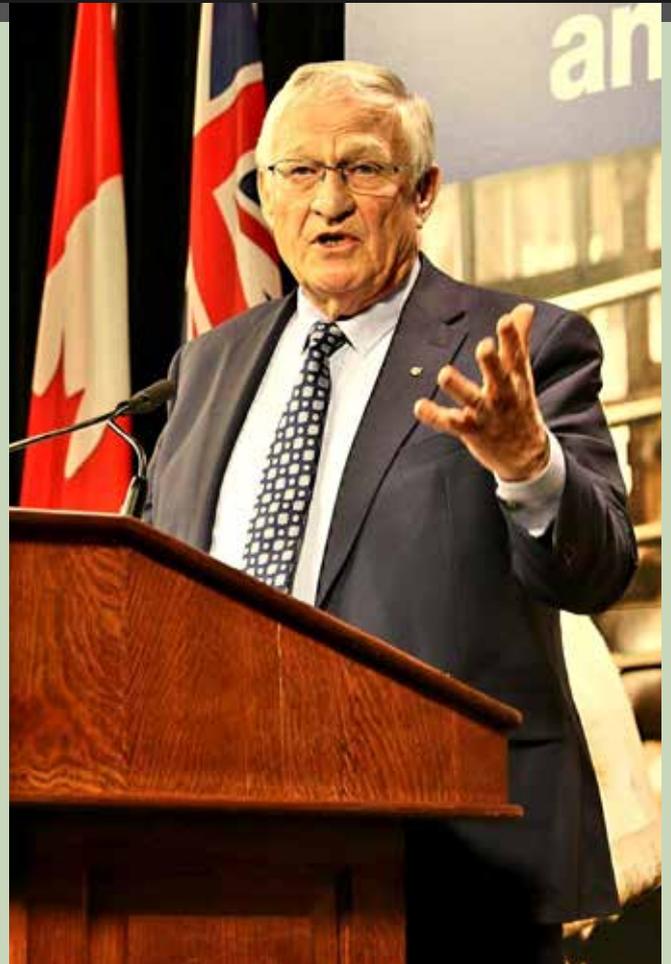
It has challenged all of us to be more flexible, and to be more compassionate. We are more mindful of the needs and safety of others. And we recognize that people, including many of you across the agriculture and food supply chain, are making sacrifices and surmounting obstacles to maintain the essential services on which we all rely.

In ways both big and small, this challenge has brought out the very best of Ontarians. It is said that until faced with a challenge of this scale, we don't know what we're capable of. I've been extremely proud of our sector's resilience during this challenge, and I continue to be inspired by its ability to adapt. This situation has made heroes of people all across Ontario who continue to work to provide for their fellow citizens.

Our government is committed to working closely with our agri-food industry to do everything we can to keep our food supply system strong during this difficult time.

The "Ontario spirit" that Premier Ford often speaks about – that sense of togetherness – is tangible and I see it in our sector every day. It's clear at every step along the food supply chain, from farm to fork. People like you who work in the agri-food sector know your work supports not only our health but our economy. I can think of no greater expression of the Ontario spirit than making sure people are fed and nourished during this critical time.

During all the uncertainties of the past weeks, Ontarians have been reassured by the fact that our agri-food sector continues to bring food to our tables. Everyone working to make that happen deserves our utmost thanks. From transporting food, to making sure grocery store shelves are full, to planting this season's crops –



you are an inspiration to us all.

I want to extend my sincere appreciation to you, all of our farmers and the province's entire food sector for the critical work you do every day and during this crisis. Our farmers and people in the food processing industry continue to work to provide for their fellow citizens.

On behalf of the Ontario government, I want to thank you for continuing to produce some of the highest quality food in the world and for being one of those heroes who truly personify the Ontario spirit.

To learn more about how the province continues to protect Ontarians from COVID-19, visit ontario.ca/coronavirus.

Ernie Hardeman
Minister of Agriculture, Food and Rural Affairs



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BOOSTING OPERATIONS AT ABATTOIRS

Ontario's beef industry may see an increase in processing power, thanks to new funding. Together, the provincial and federal governments will invest up to \$2 million into Ontario's licensed abattoirs.



Jacqueline Nix/Stock/Getty Images Plus photo

Successful applicants will use the funding to complete projects by Dec. 31 that enhance "food safety, animal welfare and biosecurity" in their operations, an Ontario government release from February said.

Programs like this one are vital to the industry, **Yaser AlQayem** said. He is the owner of **Parkhill Meats**, a licensed abattoir in Middlesex County.

"It's important to be able to comply with regulations for food safety, animal welfare, hygiene and quality," he told *Better Farming*. "We look to the government to help us to comply with these regulations."

Such investments could help abattoir operators address some of the difficulties the sector faces.

"Support for abattoirs will help enable investment in equipment and infrastructure that assists businesses in remaining competitive and adapting to market-driven demands," **Joe Hill**, president of the **Beef Farmers of Ontario**, said in the release.

The funding is part of a cost-share program under the *Canadian Agricultural Partnership*. **BF**

GFO OUT OF GGC

Ontario's largest commodity organization is no longer part of a national group.

In February, the **Grain Farmers of Ontario** (GFO) announced its withdrawal from membership in the **Grain Growers of Canada** (GGC).

The GFO felt its members' voices weren't being effectively represented in important areas through the GGC, the GFO said in a February release. The organization was also worried that the GGC's policy narrative would interfere with the GFO's work.

Some producers aren't too worried about the situation.

Farmers need to trust that the decision-makers at the GFO are making the right move, said **Ed VanDeWynckel**, a cash crop producer from Chatham-Kent.

"I'm not that concerned about it," he told *Better Farming*. "You've got to do what you've got to do sometimes." **BF**

NO MORE BEYOND MEAT AT TIM'S

A Canadian coffee chain will no longer offer products featuring plant-based proteins.

Restaurant Brands International, the parent company of **Tim Hortons**, announced in January that it will stop selling **Beyond Meat** products at its locations in Ontario and B.C.

The coffee franchise piloted plant-based breakfast sandwiches in May 2019 before proceeding with three other plant-based menu items across the country in June. By September 2019, Tim Hortons began scaling back its Beyond Meat offerings across the country.

"We introduced Beyond Meat as a limited-time offer. We are always listening to our guests and testing new products that align with our core menu offerings. We may offer Beyond Meat again in the future,"

Tim Hortons said in an emailed statement.

Some Ontario producers are following the plant-based proteins trend closely, but aren't surprised that customers prefer traditional meats.

"I think this is an 'I told you so' moment," **Paul Salmon**, a beef producer from Hamilton-Wentworth, told *Better Farming*. "I tried one (of the Beyond Meat items) and had to throw it out because it didn't taste good. A hamburger is a hamburger because it has meat in it." **BF**



MileyGen73/Stock/Getty Images Plus photo

Let's make this a safer spring season

We know everyone is anxious to be in the field. We've all faced some challenging times and the promise of a new crop season is a great time for optimism. Let's just make sure we don't cut corners on safety. With a short window to get so much work done, here are some timely reminders from OFA on how to have a safer spring season – on the farm and when you are travelling on the road.



- ✓ **Talk about safety.** Have a conversation with your family and your employees about safe practices around the farm and while travelling on roads from field to field and farm to farm.
- ✓ **Check all vehicles.** Be sure you have visible slow moving vehicle signs on any equipment or vehicles that travel on public roads.
- ✓ **Turn on the lights.** Always check that your lights work, and make it easier to always be seen by leaving your lights on all the time.
- ✓ **Take a second look.** Wherever you are – turning on a main road, moving equipment in the farm yard – always take the few extra seconds to check one more time that your route is clear.
- ✓ **Keep clear of the ditch.** Check for common road hazards like soft shoulders, narrow bridges and loose gravel when travelling on public roads.

OFA: Putting farm safety first.

NEW PROJECT FOR 4-H KIDS CENTRES ON ONTARIO FOOD

4-H Ontario and **Farmers' Markets Ontario** are partnering to facilitate programming that encourages connections between youth, their communities, agriculture and local food.

The two organizations have developed a toolkit to help interested youth get involved in a local 4-H club or farmers market.

The resources should assist those clubs and markets in making mutually beneficial connections.

"I think the beauty of this project is that it's not a one-size-fits-all approach," **Sheena Switzer**, the communications manager at 4-H Ontario and lead on the project, told *Better Farming*.

"Every market and every club is different. We've given ideas on how (members) can participate but, ultimately, we are encouraging both the local clubs and markets to find the fit that works best for them."

The **Waterloo 4-H** club, for example, has held cooking events in space provided by the **Kitchener Market**, and used ingredients sourced from its vendors.

"Many farmers markets provide free or discounted space to non-profits so it's not an added cost for the clubs," Switzer explained.

The partnership offers opportunities for 4-H youth to interact with their communities on the topics of agriculture and food.

While this programming is temporarily postponed due to the COVID-19 outbreak, organizers look forward to resuming the projects when public health officials deem such activities safe. **BF**



Ontario Plowmen's Association photo

IPM CONTINUES TO MAKE HISTORY

An event rooted in the ag community recently received a special recognition.

The 2019 International Plowing Match and Rural Expo (IPM), which took place in Verner in September, was recognized as a Top 100 event in the province by **Festivals and Events Ontario**.

Volunteers felt humbled to receive this honour.

"The plowing match is near and dear to my heart," **Sheila Marshall**, president of the **Ontario Plowmen's Association (OPA)**, told *Better Farming*. "It's great to see all of the volunteers come together."

Marshall, who has been involved in plowing matches since 1969, has also co-chaired the Ontario Queen of the Furrow program since 2014.

"Being one of the top 100 in the province ... makes you feel like you really are doing something wonderful," she said.

As the event travels across the province, each year is unique.

"I enjoy seeing what local people promote in their communities," she

said in an interview.

One of her favourite aspects of the event is the community beautification. For the 2019 IPM, volunteers sold scarecrow kits for people to assemble on their lawns, she said.

In fact, many people converted their yards into scenes to "house" these scarecrows, including making tractors out of straw bales.

The Verner IPM also featured a variety of entertainment, including lumberjacks, a RAM Rodeo and actress **Amber Marshall** (star of the **CBC** show **Heartland**), Sheila said. Local talent took to the stage, too.

The contributions of many volunteers ensure the success of the event.

David Murray, past president of the OPA, has volunteered with the association for about 15 years.

Murray, who has attended every IPM for 35 years, appreciates the "variety of entertainment and the opportunities to see suppliers and exhibitors at the event," he told *Better Farming*. He also values the friendships he has developed across the province. **BF**



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Dr. David Huyben photo



PROF HELPS SCHOOL OF RESEARCH BUBBLE AT U OF G

A new assistant professor in aquaculture will join the **University of Guelph's** (U of G's) department of animal biosciences in July.

Dr. David Huyben completed his undergraduate and master's degrees at U of G in 2012. He moved to Europe to complete a PhD at the **Swedish University of Agricultural Sciences** and post-doctoral research at the **University of Stirling** in Scotland.

The experience has "given me an international perspective on aquaculture research and teaching," Huyben told *Better Farming*.

The production of aquatic species is a growing international industry.

"I am motivated to improve the sustainability and health of fish farming in order to support this vital industry in providing nutritious food," Huyben said.

He is committed to the expansion of aquaculture in Ontario, which "has the potential to grow to volumes similar to those found on the east and west coasts of Canada," he said.

"Currently, most production comes from rainbow trout grown in net-pens in the Great Lakes, although we are seeing more warm-water species, such as tilapia and barramundi, and aquaponics systems that grow plants and fish together," he added.

His research aims to optimize fish growth through improved nutrition, environment and welfare. **BF**

MUNICIPALITY CREATES AG COMMITTEE

An Ontario municipal council has voted in favour of developing a new agricultural committee for the region.

In January, the North Perth council supported Mayor **Todd Kasenberg's** motion to establish the **Agriculture and Agri-Technology Advisory Committee** (AAAC).

One of the reasons Kasenberg wanted to create the group is to have a team in place that can use their expertise to support their municipality.

The committee will include councillors and members of the local rural community like farmers, lenders and individuals involved in agri-tech.

Once the group is established, it will provide the council with recommendations on how to support and promote North Perth as a hub for agriculture, agritourism and agri-technology.

"Are there barriers to effective agriculture in our community? If so, we want to know, act and lobby if we need to," Kasenberg said. "How can we move forward from an economic development perspective with the possibilities of agri-technology that lie ahead of us?"

The application window for the AAAC closed on March 6 and the council looks forward to appointing committee members shortly.

North Perth is Perth County's fastest-growing community, its website says. **BF**



Scharifn86/Stock/Getty Images Plus photo

A FARMING LIFE: TOM LASSALINE

Cash crop farmer and beef producer; former chair of the Ontario Soybean Growers Marketing Board. Born Feb. 10, 1945; died Jan. 3, 2020, aged 74.

"If it was farm-related, Tom was eager to go," **Marg Lassaline** said recently of her late husband.

Tom grew up on a farm near Inwood. He married Marg (nee Lawson) in 1969.

His career led gradually through off-farm employment as a member of the Sarnia-area **Boilermakers Union** to a cash crop and cow-calf operation near Alvinston.

Now, Tom and Marg's son **Jeff Lassaline** and his family run the operation.

Tom and Marg's daughter

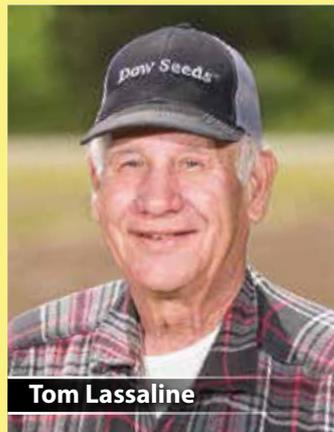
Heather Heyboer and her family farm near Ridgetown.

Tom and Marg "semi-retired" in 2014, she said in an email exchange with *Better Farming*.

As board chair of the Ontario Soybean Growers Marketing Board in the 1990s, Tom helped expand that crop's presence in the province through trade missions to Indonesia, Japan and European countries.

He was active in at least nine other farm-related groups, including the district agricultural society, **4-H**, area mutual insurance companies and **Wanstead Farmers Co-operative**.

"Tom's passions were farming, cattle, and attending meetings and auction sales," Marg said. **BF**



Tom Lassaline

Geoff Robins photo



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THE CONTINUING ENVIRONMENTAL

Ontario's long-standing Environmental Farm Plan program soon change to better support farm operations and sustainable product sales.



SimplyCreativePhotography/iStock/Getty Images Plus photo

Canadian farmers depend on their land to support their livelihoods and continue their family legacies. As a result, producers keep environmental protection top of mind when making management decisions. Farmers make the sustainable production of safe food a priority and use provincial Environmental Farm Plans (EFPs) to help maintain this commitment.

Ontario was the first province in Canada to develop and use EFPs, says Mark Reusser, a Waterloo County farmer and vice-president of the OFA.

“Ontario’s EFP is a great example of a confidential, voluntary, farmer-designed program that attempts to address on-farm environmental issues in an environmentally and economically sustainable manner. The EFP has been and continues to be a good model for adoption by other provin-

ces, (territories) and states across North America,” he says.

Some of Ontario’s grassroots ag organizations helped develop the EFP, which launched in 1993. Other provinces and territories developed similar programs shortly thereafter.

“I think the EFP is a fantastic success story of peer-to-peer strategies,” Jennifer Doelman says to *Better Farming*. She is a certified crop advisor, a Renfrew County Soil and Crop Improvement Association director and a stewardship-focused producer.

Instead of using “top-down rules that may not be feasible or practical, the EFP has allowed for our industry to set goals and best management practices (BMPs),” she says. They “suit the needs of stakeholders while being receptive of, and accountable to, society’s expectations.”

Doelman and her husband Michael run a cash crop operation near Douglas in Renfrew County.

While Ontario has set the standard for environmental protection programs across the country, the province’s ag stakeholders want to continuously

improve. So, officials seek to enhance the EFP and develop a national program.

This month, *Better Farming* speaks with farmers, sustainability specialists and other EFP experts to learn more about the plan’s objectives and changes that could better support motivated environmental stewards.

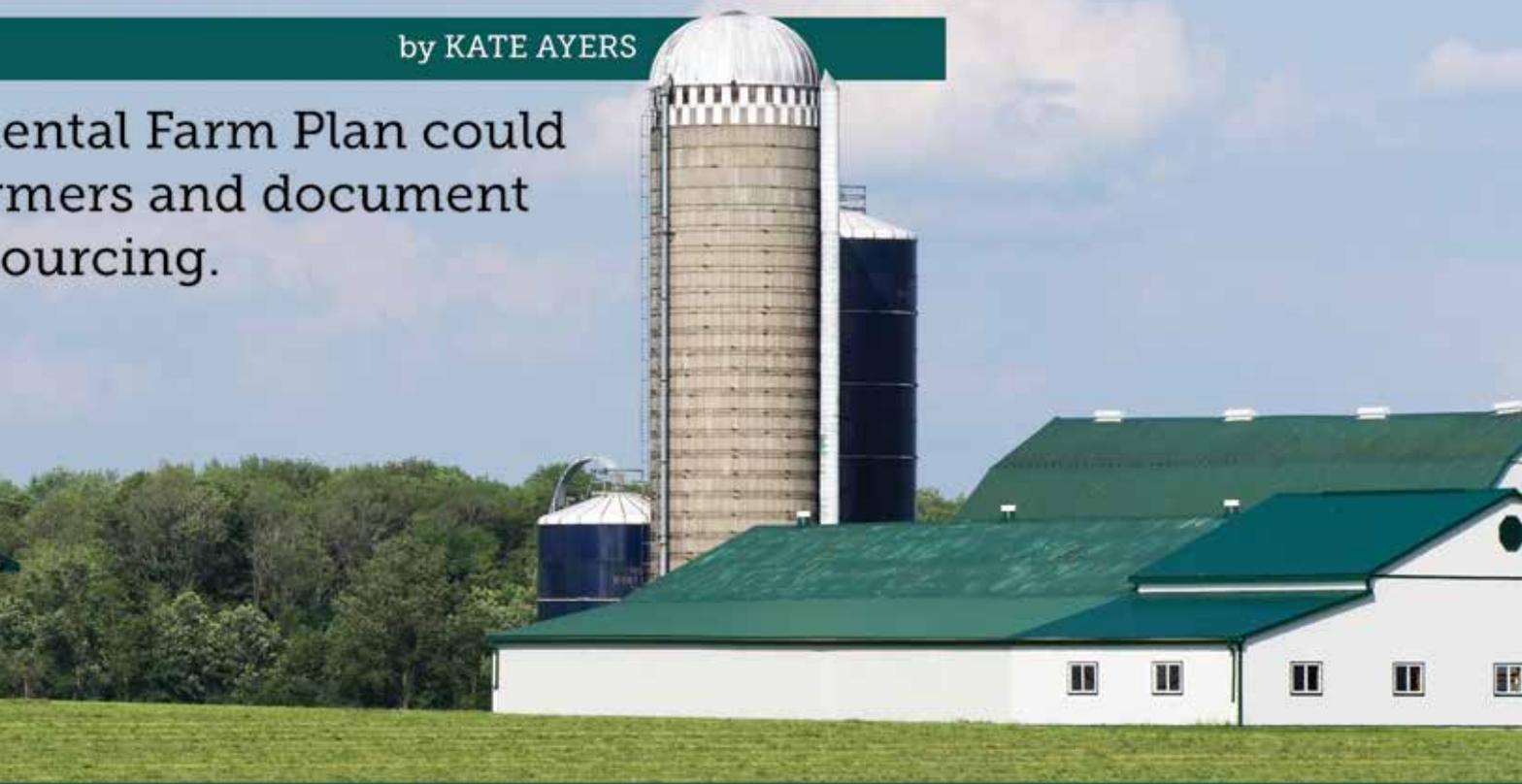


Mark Reusser

EVOLUTION OF FARM PLANS

by KATE AYERS

Environmental Farm Plan could help farmers and document their progress.



What is an EFP?

Ontario's EFP is a "self-evaluation process for risk assessment of up to 23 different environmental areas on a farm," says Christa Roettele, OMAFRA's spokesperson. These areas include soil health, water quality, dead-stock management, nutrient management and pesticide use.

Stakeholders established the original plan nearly 30 years ago through the Ontario Farm Environmental Coalition. It involved the Ontario Federation of Agriculture, the Christian Farmers Federation of Ontario, AGCare and the Ontario Farm Animal Council, says Terry Daynard. He is a commercial grain farmer near Guelph, and he served on an ad hoc committee that helped create the Ontario Farm Environmental Coalition.

In 2012, AGCare and the Ontario

Farm Animal Council joined to form Farm & Food Care Ontario.

Coalition decision-makers selected the Ontario Soil and Crop Improvement Association (OSCIA) to spearhead the program since coalition members released the first workbook,

Daynard adds.

"To complete an EFP, farmers participate in an in-person workshop delivered by OSCIA staff. The workshop gives farmers



Jennifer Doelman

an opportunity to increase their awareness about environmental risks, complete their EFP workbooks and set realistic action plans to improve environmental conditions," Roettele says.

"Through the EFP process, farmers highlight their farms' environmental strengths and identify areas of environmental concern," she says.

"All EFP questions encourage producers to go beyond the provincial and federal legislation, and adopt a broad suite of environmental BMPs," Roettele adds.

Farmers who complete EFPs may apply for cost-share programs to support their action plans. Funding programs include the *Canadian Agricultural Partnership* and the Lake Erie Agriculture Demonstrating Sustainability program.

In June 2019, the OSCIA "upgraded the electronic EFP workbook (eEFP), making it easier for farmers to continue using this tool and to renew their EFPs," Roettele says.

"The updated eEFP provides a

ENVIRONMENTAL FARM PLAN

more user-friendly interface and will allow for better integration of other digital tools and resources,” she says. Program administrators encourage farmers to renew their plans every five years.

Addressing limitations

Ontario’s EFP “is an integral part of good production practices in modern agriculture, including livestock production,” says Brent Cavell. He is with the Ontario Cattle Feeders’ Association and is the quality assurance manager of the Ontario Corn Fed Beef program.

While producers have used the EFP to improve environmental sustainability on their farms and administrators have developed the program to meet producer and industry needs, more work could be done, some stakeholders say.

The EFP “is really good at pointing out pieces from an environmental perspective,” says Nick Betts. He is the Americas’ director for the Sustainable Agriculture Initiative (SAI) Plat-



Jennifer Doelman photo

Jennifer Doelman and her husband Michael run a cash crop operation near Douglas.

form. “But there are economic and social elements of sustainability that need to be considered as well.”

The SAI Platform is a global non-profit network of more than 100 members, the organization’s website says. The group’s mission is to harness the collaborative power of its members to

accelerate the widespread adoption of sustainable agricultural practices.

Paul De Jong thinks that the program should go beyond the basics. He’s the owner and operator of the Charlton Angus Cattle Co., which is in Timiskaming District. De Jong is also the 2020 recipient of the Beef

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ENVIRONMENTAL FARM PLAN

Farmers of Ontario's Environmental Stewardship Award.

EFPs identify "high-risk areas on your farm and outline basic management practices to sustain your operation. But I don't think the program goes far enough to educate producers about how to rebuild soils on the farm," he says.

The online version "could include links to producer testimonies of changes and improvements that worked on their farms," he says. "That way, farmers can learn from each other."

De Jong has completed five EFP renewals over his 30-year farming career.

Cost-share funding, a valuable component of this program, can reduce the costs that farmers incur when they complete environmental projects, says Reusser.

However, farmers are often responsible for most of the investment, and funding applications can be cumbersome, a few people say.

The application process takes valuable time away from the planning and construction of on-farm projects, Doelman says.

"I find it's more of a 'square peg, round hole' kind of thing," she says. "We want to try to improve soil health, and Product A looks like the best way to accomplish this goal. Unfortunately, Product A doesn't qualify for funding, so we'll go with Product



Beef Farmers of Ontario photo

Paul De Jong (second from the left), the owner and operator of the Charlton Angus Cattle Co., is the 2020 recipient of the Beef Farmers of Ontario's Environmental Stewardship Award.

B instead, even though it's not going to accomplish our goal as well."

Completing funding applications can be time-consuming and frustrating for producers, Doelman adds.

"Unless it's a big project, I don't apply for funding because I'm not going to get my time invested back," she says. The time that she spends on the application and the submission of paperwork isn't worth the money that she'll get back from the program if the project is approved, she says.

For smaller projects, "we invest our time in project completion instead of paperwork."

De Jong agrees.

"Environmental stewardship is in the farmer's best interest, but returns are slow or are not noticeable in the short term," he says.

"Income generated on farms does not always allow for improvements," he says. "And farmers should not have to compete against their neighbours for funding."

Farmers who consistently take care of their land and want to make further improvements should be rewarded, not be put at a disadvantage for access to funding, De Jong says.

Cost-share programs only fund

An advertisement for Husky Farm Equipment Ltd. featuring various pieces of farm equipment in a field. The equipment includes a large tanker truck, a smaller tanker, and several pipe carts. The text is in green and yellow. A Twitter logo is in the bottom right corner.

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(projects) that lead to improvements,” he says in an interview with *Better Farming*.

“If you are already doing the right things, you aren’t eligible for funding or you get a smaller portion of costs shared,” De Jong says.

“It is recommended that all farm operations complete an EFP and, for some (farmers, an EFP) is mandated,” De Jong says.

But “completion of an EFP is based on the honour system. There is no follow up to (ensure) accuracy and there is no requirement to improve on poor ratings.”

Fortunately, industry stakeholders are constantly developing the EFP to meet producers’ needs.

A national EFP

Farmers are familiar with their provincial EFPs, and many producers participate in workshops and plan renewals. In total, 35 per cent of Canadian farmers and ranchers have completed an EFP, the National Environmental Farm Plan’s website says. This level of participation makes the EFP the most extensively used environmental program in the ag industry.

Now, stakeholders want to create a harmonized program that would build on the provincial and territorial EFPs’ credibility, the website says. This new program could help farmers improve the marketability of their products as some major buyers shift to using EFPs as a marketing tool to show consumers their supply chains’ commitment to sustainability.

A national standard could make purchasing more streamlined for companies that buy products from multiple Canadian regions, the website says.

Reusser agrees.

“There is a good chance that many of our purchasers such as Loblaws, Costco and Walmart will require that farmers prove they are looking after the environment and producing sustainable products,” he says.

“Farmers would prefer that ag stakeholders develop a program that proves our environmental sustainability rather than have these companies develop a program for us.”

As part of this movement, the “OSCIA has been contributing over the last several years to a national harmonization effort involving all 10 provinces,” Andrew Graham, OSCIA’s executive director, says in a statement.

“EFPs have the potential to play an important role in supporting the global movement toward more sustainably sourced ingredients and products. Currently, six provinces (British Columbia, Alberta, Saskatchewan, Ontario, Quebec and Nova Scotia) have independently started or have completed benchmarking their EFP content against the SAI Platform Farm Sustainability Assessment (FSA) 2.0,” Carlene Schneider, the agricultural communications consultant for the Alberta EFP, says in a statement. She prepared this statement in spring 2019 on behalf of the national EFP group.

The SAI Platform FSA assesses a farm’s level of sustainability by asking producers a set of questions. The answers help the SAI Platform standardize farm assessments, the organization’s website says.

“Through this (benchmarking) process, provinces will



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ENVIRONMENTAL FARM PLAN

identify how their EFPs could help meet the international sustainable sourcing requirements and environmental sustainability benchmarks laid out in the SAI Platform FSA 2.0. These provinces have all chosen to work toward the FSA 2.0 standard at the silver level, as it is widely used and benchmarked internationally,” Schneider says.

The FSA contains 112 questions about the social, environmental and economic pillars of sustainability, says Betts.

“Provinces are looking to integrate or partner with other programs to include some of those social and economic pieces that are not present in their respective EFPs,” he says.

To achieve “silver level verification, farmers need to answer 100 per cent of the essential questions, 80 per cent of the basic questions and 50 per cent of the advanced questions.”

Any producer can complete the free assessment online.

While farmers use provincial EFPs to demonstrate sustainability, a nationwide approach to this program could improve planning and delivery, Betts says.

“Collaboration is always better than doing things independently and spreads costs over multiple parties,” he says. In the process, “you also gain multiple sides of insight and resources to solve problems.”

Farmer benefits

“Sitting down for a day and going through the whole EFP workbook is a good reminder about BMPs and continuously improving your practices on the farm,” says Reusser.

Doelman agrees and comments on risk management.

“The EFP has benefited our farm by creating a formalized structure for due diligence, especially regarding wells, and fertilizer, pesticide and fuel storage,” she says.

Risks “are often overlooked on a busy farm operation until there is a big problem,” she says. “And then it’s too little, too late.”

The benefits of completing an EFP extend beyond the fence rows of farms and protecting the environment. For



Diane Kuhl/Stock/Getty Images Plus photo

Ontario’s Environmental Farm Plan “is an integral part of good production practices in modern agriculture, including livestock production,” says Brent Cavell.

example, farmers can use their EFPs to keep themselves accountable.

Completing an EFP “is also a great way to get into the habit of good record-keeping. I now update the site plan for our insurance company and our emergency response plan binder when I send in my EFP information,” Doelman says.

Most importantly, the EFP boosts the credibility of local farmers, she adds. “The OSCIA provides a driveway sign for us to proudly show when an EFP is done. I wouldn’t say people actively seek these signs out, but they still let us say to our neighbours, ‘I prioritize environmental stewardship and here is proof.’”

Promoting participation

While they want to do what is best for the environment and improve the sustainability of their operations, farmers also have bottom lines. Incentives can encourage producers to complete farm upgrades.

For example, farmers could receive “tax credits for having current EFPs,” Doelman says. This commitment

“would be a great start to reward good stewardship.”

Increased promotion of participating farmers’ successes could encourage other producers to complete EFPs for their operations.

“Economic drivers are key but, as we increasingly understand the importance of soil health and the impact of integrated biological systems on farms and crop production, producers will want to use more BMPs on their farms to ensure their viability for future generations,” Betts says. **BF**

A graphic with a dark green background. At the top, the text "DIG DEEP" is written in a bold, white, sans-serif font. Below this, there is a circular logo on the left containing a black shovel and a QR code on the right. At the bottom, the text "Visit [BetterFarming.com](https://www.betterfarming.com) TO LEARN ABOUT P.E.I.'S ENHANCED EFP FRAMEWORK." is written in white, sans-serif font.



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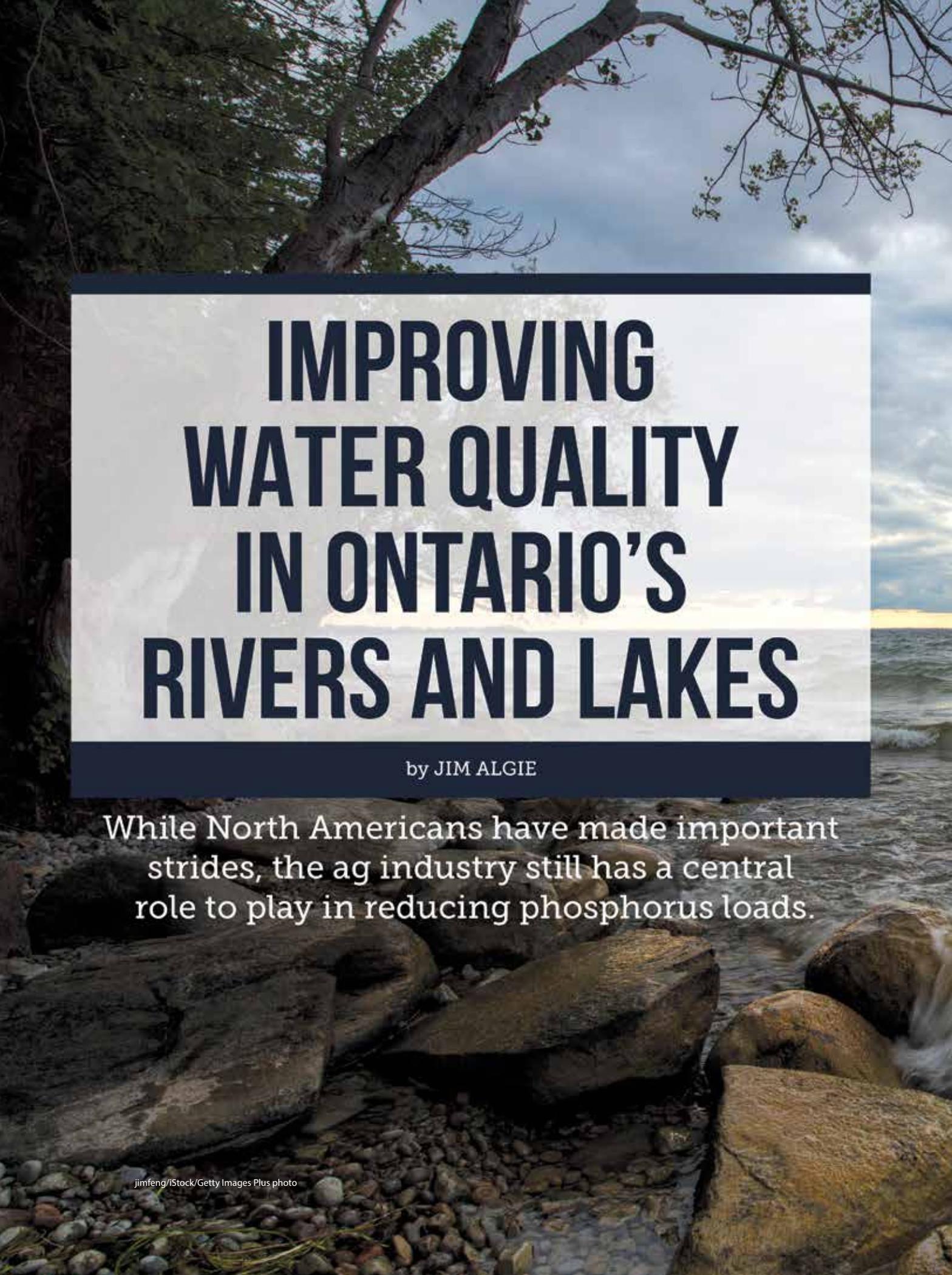
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IMPROVING WATER QUALITY IN ONTARIO'S RIVERS AND LAKES

by JIM ALGIE

While North Americans have made important strides, the ag industry still has a central role to play in reducing phosphorus loads.



In August 2019, the Maumee Bay Brewing Co. of Toledo, Ohio, released a speciality beer. It commemorated the 2014 contamination of the city's drinking water after a toxic algae bloom appeared in western Lake Erie.

The brewers called the beer Creature from the Alegeae Bloom. A swampy-looking double India pale ale with alcohol-by-volume at 7.2 per cent, it received mixed reviews on beer appreciation websites.

However, the Ohio Environmental Council strongly endorsed the beverage. The council received part of the proceeds from the sale of the specialty beer and used Creature to boost awareness about Lake Erie's condition.

Nobody died in the crisis, which left half a million people without clean drinking water for nearly three days. But 110 people reported related illnesses, the U.S. Centers for Disease Control and Prevention indicates.

A 2019 report from the Ohio Department of Higher Education detailed 54 algae bloom-related projects with total budgets of more than \$7 million. Researchers' projects included the use of tracking buoys and satellites, and new methods of livestock manure management.

Last year, the Ontario government invested \$1.8 million to support environmental research in on-farm solutions to protect the province's natural resources, Ernie Hardeman says in a statement to *Better Farming*. He's the minister of agriculture, food and rural affairs.

The provincial government has announced commitments to spend up to \$2.5 million in 2020 for work in the Lake Erie-Lake St. Clair region and expects to announce additional funding soon, Hardeman says.

"Our government is committed to helping protect what matters most, such as water quality in the Lake Erie watershed," he says. He points to land stewardship efforts by farmers and joint federal-provincial projects in western Lake Erie.

Basic science linked phosphorus and algae to the 25,700-square-kilometre lake's widely reported death in the 1960s.

Phosphorus accumulation in the lake followed generations of buildup of industrial and urban effluent as well as runoff from intensely farmed lands.

Phosphorus is a naturally occurring element. Farmers apply livestock ma-

nure and commercial fertilizers to provide this essential nutrient for crop production. But when concentrated in water bodies, phosphorus can foster toxic algae growth and deplete life-giving dissolved oxygen.

Remedial efforts that began in earnest 50 years ago concentrated on industrial and municipal sources. But the re-emergence lately of hazards in western Lake Erie has focused government and scientific attention on the agricultural industry.

In 2016, U.S. and Canadian governments aimed to reduce the phosphorus levels that entered the lake by 40 per cent before 2025. Officials used 2008 levels as the reference for the target.

By 2018, Lake Erie's annual phosphorus load was close to the 11,000-tonne target.

However, the amount of dissolved, reactive phosphorus in the lake has increased, says a report written by Dr. Jeff Reutter, a retired Ohio State University biologist. Total phosphorus includes particulate attached to soil which is 25 per cent bioavailable whereas dissolved phosphorus is 100 per cent bioavailable.

Continued on page 26

FARM FAMILY PROTECTS THE ENVIRONMENT



Ted Mendrek, a farmer in the Holland Marsh, stands with his carrot-harvesting machine that has de-dirting features.

The Mendrek family introduced new measures in their farm operation over the past 10 years to manage erosion and related nutrient runoff problems in several ways.

“This (work) is part of being a good steward and a responsible farmer,” Ted Mendrek says. He grows onions and carrots with his wife Joyce and their son, Nick, on 100 acres of “muck” soil on the narrow, west banks of the Holland River.

The Mendreks received a 2019 award from the Lake Simcoe Region Conservation Authority for land management improvements. One such project was a naturalized 25-foot (7.5-metre) buffer strip that stabilizes a 1,500-foot (450-metre) section of fragile riverbank.

At the time of *Better Farming's* late winter visit, the farm office overlooked a 50-acre field covered in winter residue from cover-crop barley.

The family use barley for early season shelter of vegetable seedlings and to protect the soil against wind erosion.

Two years ago, the Mendreks also added a de-dirting system to their

carrot harvest equipment to retain soil once trucked routinely to nearby packing plants.

The family conduct soil testing annually and monitor crop development with tissue samples. The Mendreks use this data to finely tune their nutrient-management plans and apply their fertilizer with GPS guidance.

Ted figures these targeted fertilizer applications have saved the family between 15 and 20 per cent of production costs.

Drainage tile renovations include water storage to allow the family to better monitor and manage water flow.

These nutrient management strategies benefit adjacent water quality by retaining nutrients, including phosphorus, within the farm's soil, Ted says. Keeping nutrients out of adjacent waterways also helps conserve soil.

“In the last 20 or 30 years, we've lost through erosion at least 15 to 20 feet (4.6 to 6.1 metres) of land to the Holland River,” he says. “We must control that erosion of our land.” **BF**

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During the algae bloom, government officials posted signs warning people to avoid the water.

Continued from page 23

Dr. Wanhong Yang and his graduate students at the University of Guelph’s Watershed Evaluation Group have conducted many studies examining the agricultural practices, public policies and social dimensions of non-point pollution in Ontario.

The most effective solutions account for variations in landscape and require “a generational effort,” Yang tells *Better Farming*.

“We have 200 watersheds in Lake Erie. Some of them ... you can do everything, and it doesn’t matter. You only achieve 10 per cent improvement (in environmental conditions). Some watersheds can achieve 80 per cent,” Yang says. “It’s like everybody’s different; the landscape is also different.”

Late in the summer of 2019, Keith Reid, a Guelph-based soil scientist, and colleagues at Agriculture and Agri-Food Canada began publishing a series of research papers documenting phosphorus in Canadian agricultural soils. Researchers at Waterloo, McMaster, Ryerson and Windsor universities have also investigated Lake Erie-related

subjects.

“We’re trying to understand” the changing problem of surplus phosphorus, Reid says.

“If we can’t understand, we can’t give good advice to policy managers. I’m always conscious if we give advice, it has to be something that’s actually practical to implement.”

The current 11,000-tonne target for total phosphorus in Lake Erie sounds like a lot, but it’s a relatively small amount when broken down into the contributions from individual fields. Typical loss rates for fertilizer likely represent less than a dollar an acre, says Reid. Some proposed technical solutions come at a much higher cost, he adds.

A group of Ohio State University researchers has studied the ins and outs of a tax on phosphorus. Members of the International Joint Commission have considered the potential of phosphorus licencing regulations. This U.S.-Canada commission oversees common issues across the Great Lakes border.

“The lake is telling us that we need to do more,” says Matthew Child, a

physical scientist in the Windsor office of the International Joint Commission. “Although there are some good things happening, ... the lake is still expressing significant distress, and sources from agricultural landscapes are contributing to that issue.”

The problems are manageable but will require customized solutions, Reid says. The fix will take “many little hammers, but it’s the right hammers in the right place,” he adds.

“We need to look at each field and say, OK, ... where are the opportunities where we can most effectively reduce losses” of phosphorus? **BF**

WINS IN SOME OF ONTARIO'S WATERSHEDS

The bad news about Lake Simcoe is that phosphorus loads rose, reports the Lake Simcoe Region Conservation Authority's most recent analysis. But the LSRCA's researchers also discovered some good news.

Dissolved oxygen, which is an important marker for improved water quality, also increased over three years, although conservation officials aren't yet entirely sure why.

The report, released in January, covers the three years which ended in the spring of 2017.

More than 30 years of work with agricultural landowners in the 3,400-square-kilometre Lake Simcoe watershed has reduced erosion and related phosphorus runoff from farmland, says Mike Walters. He's the chief administrative officer at the LSRCA.

A soil scientist by training, Walters joined the LSRCA 35 years ago. His first assignment included stewardship assistance for landowners.

Co-operation with farmers has

worked well and accounts for three-quarters of the LSRCA's stewardship work. Projects include introducing (or, in some cases, upgrading) buffers, erosion control, manure storage, wash-water discharge and tile outlet control structures.

Between 2014 and 2018, with the LSRCA's support, farmers introduced cover crops on about 5,928 acres of the watershed. These efforts reduced phosphorus loading by an estimated 933 kilograms over the four years, Walters says.

The Holland River, which drains into Lake Simcoe, experienced an 8 per cent decrease in phosphorus concentration.

Even so, phosphorus continues to accumulate across the lake's 722-square-kilometre area. Farm sources still contribute, as do urban areas booming with development along the Highway 400-404 corridor between Vaughan and Barrie. As a result, the Newmarket-based conservation



Thames River Phosphorus Reduction Collaborative photo

One of the municipal blind inlets at the Woodstock demonstration site drains about 50 acres in an alfalfa field.

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authority has adopted what Walters says are Ontario's strictest stormwater management policies. They have "zero discharge" limits for new construction.

He links the puzzling findings in the most recent phosphorus load report to "changes in the weather pattern, changes in seasonality," he says.

The report for Lake Simcoe calculated 131 tonnes for 2017. That figure is almost double the previous year's 73-tonne load, which fell from 87 tonnes in 2015.

The 2017 data most likely reflects the changing nature and timing of precipitation, Walters says.

"We're getting these freeze-thaw cycles in January and December," he says. "Because the water's flowing over frozen ground, there's no place for it to infiltrate. ... Anything that's on the surface is getting washed" into the watershed.

As for improvements in dissolved oxygen, Walters has some hypotheses. Researchers will examine the increasing role of filter-feeding invasive mussels which can cycle Lake Simcoe's water volume within about four days. These mussels may remove phosphorus and might explain improvements in dissolved oxygen.

Interest in environmental projects in the Lake Simcoe watershed extends beyond the region. For example, in 2018, the Florida-based Everglades Foundation used the Holland River as a test site for phosphorus-removal technology companies which were competing for a US\$10-million international prize. This summer, five teams will participate in the final phase of testing in the Everglades.

The OFA commissioned a 2017 review of phosphorus remediation efforts. The researchers found hundreds of projects, some of which began as early as 1960. Project participants included Canadian and Ontario government agencies, consulting engineers, university researchers and conservation authorities.

Charles Lalonde, a Guelph-based agricultural engineer, managed a federally funded project of the Holland Marsh Growers' Association. The four-year project, which ended in 2016,



Thames River Phosphorus Reduction Collaborative photo

In June, industry stakeholders toured a Thames River Phosphorus Reduction Collaborative demonstration project.

evaluated a variety of agricultural, wastewater treatment systems.

More recently, Lalonde began working as the project coordinator of the Thames River Phosphorus Reduction Collaborative (TRPRC). The OFA and the Chicago-based Great Lakes and St. Lawrence Cities Initiative are jointly administering the collaborative. TRPRC funders include the Canadian and Ontario governments as well as other stakeholders who provided in-kind contributions.

In five locations within the Thames watershed, Lalonde and his collaborators have begun a five-year test of techniques that intercept and treat farm drainage water. The Thames rises from wetlands in Perth County and flows 273 kilometres southwest through London. The river enters the Great Lakes system at Lighthouse Cove on Lake St. Clair.

The demonstration includes two patented treatment methods, one by Waterloo Biofilter Systems Inc. of Waterloo and the other by Muddy River Technologies of Delta, B.C. Both methods use electrical current with settling and filtration materials at municipal drain sites near Chatham and London, respectively.

On a row crop farm in Oxford County, TRPRC collaborators are testing slag-filled cartridges inserted in field drainage pipes. Bluewater Pipe Inc. and McCutcheon Farm Drainage Ltd. installed the system.

At another Oxford County farm, TRPRC representatives installed Silt Sock Environmental filter tubes in Hickenbottom drainage structures.

Finally, researchers are testing Filtrexx NutriLoxx absorbent material installed in concrete chambers at the edge of a drainage system on a Chatham-Kent row crop and hog farm.

Lalonde supports "a multi-barrier approach" to phosphorus management. It begins with careful control of fertilizer applications, tillage and cropping activity to avoid waste. The approach also must include edge-of-field controls such as those systems mentioned in the TRPRC study.

To date, farmers' mitigation work has concentrated on methods that prevent phosphorus from leaving their fields.

Planned TRPRC experiments will fill knowledge gaps about "what happens when that phosphorus has already left the land and is in the water system," Mark Reusser says.

He is a Waterloo County poultry producer and an OFA vice-president. He also co-chairs the TRPRC project with Randy Hope, a former Chatham-Kent mayor.

"This is not rocket science," Reusser says. "The trick is to do (this assessment) at a field scale, and economically in southwestern Ontario."

Treatment methods "will all be costed," he says. "The whole point is ... to see if we can do it cheap enough so a farmer can say, 'This makes sense for me.'

"It's our intent in agriculture ... to see if we can do this (work) voluntarily in an economically efficient way without having provincial legislation come down on us." **BF**

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FARMERS GIVE BACK THROUGH INTERNATIONAL SERVICE



Canadians volunteering abroad can help resource-poor

Farming is a tough job no matter where you live. Producers face fickle weather patterns, volatile markets and increasing scrutiny from the government and consumers.

Despite the challenges at home, some Canadian producers volunteer to help other farmers abroad.

About 90 per cent of the world's 570 million farms are family-owned, the Food and Agriculture Organization of the United Nations estimates.

Most farms are smallholdings in the developing world. Producers in such operations grow food mostly for subsistence, and their resources are limited.

Smallholder farmers are diverse, and so are the challenges they face. In addition to the weather and market challenges inherent in the agricultural industry, smallholders also face such hurdles as poverty and limited access to land, markets and agronomic resources.

This month, *Better Farming* explores how Canadian farmers and organizations help improve the lives of producers in developing regions. We speak with Dr. Rebecca Tiessen, a professor of international development and global studies at the University of Ottawa, about finding a good-quality international volun-

teering program. We also connect with the founders, volunteers and employees of organizations that work to improve the lives of farmers in developing regions.

While the COVID-19 pandemic has halted international travel, we consider how Canadian farmers have assisted their counterparts around the world and look forward to a time when such activities will again be feasible.

Farmers Helping Farmers

About 40 years ago, Prince Edward Island hosted the International Family Farm Consultation. At the

ROUGH SERVICE WORK

by JACKIE CLARK



Producers from a local potato society in Kenya filled out a survey. They met with Farmers Helping Farmers staff to discuss similarities and differences between potato production in Meru County and P.E.I.

farmers and learn more about the global ag community.

time, 30 farm families in P.E.I. hosted representatives from 30 developing countries for two weeks, Teresa Mellish tells *Better Farming*. She is one of the founders of Farmers Helping Farmers.

During the event, “this hurricane went through the island of Dominica, flattening their banana crop,” Mellish says. The Dominican representative discussed the stress on the farm families of Dominica.

The news of the disaster affected the farmers from P.E.I. They wanted to better understand the challenges that farmers face in developing nations, so the P.E.I. producers developed

an exchange program. “Out of that came Farmers Helping Farmers,” Mellish says.

After much discussion, organizers launched an exchange program in Kenya and Tanzania. They had strong relationships with representatives and partner organizations in those countries. Farmers Helping Farmers has since developed a long-standing relationship with women’s groups, dairies and schools in Kenya’s Meru County.

Although program volunteers used to work all over the country, they now focus on one region.

“We work with (local groups) for

several years in more depth, and we make a difference before we leave,” Mellish says.

Farmers Helping Farmers sends experts in dairy production, horticulture, nutrition and bookkeeping to teach local producers, and employs six full-time staff in Kenya who train area farmers year-round, Mellish says.

Kendra Thurston is a field research agronomist at Cavendish Farms in P.E.I., and she travelled to Kenya with Farmers Helping Farmers for three weeks in February.

“I was a little nervous of not knowing what I was really going to

be able to do and how I was going to be able to help,” Thurston tells *Better Farming*. But “very quickly, on the ground ... things came together.

“Most of the farmers in Kenya, or at least the region we were in, are the wives. The husbands work outside the home,” she says. “The women there don’t have a lot of access to resources, so they quite often are self-organizing and creating women’s groups.”

She worked with women’s groups to help install rainwater tanks and drip irrigation systems. Thurston gave advice on planting, harvesting and storage techniques for crops like kale, potatoes and flash collards.

She also helped develop a safer spraying mechanism for pesticides.

Many farmers in Kenya “use knapsack sprayers, and they don’t really have any protective gear,” Thurston explains. Farmers Helping Farmers’ representatives developed a sprayer that producers can pull behind their bodies, so people don’t walk through the spray.

Enactus: Project One Seed

Project One Seed organizers and volunteers have worked in Zambia since 2012.

As of 2019, the team has improved the lives of at least 638,704 people living there, organizers estimate.

Belinda Bowman is a beef farmer in Middlesex and Bruce counties who has travelled to Zambia to assist with Project One Seed.

“I work directly with Lambton College and Enactus,” Bowman tells *Better Farming*. Enactus is an international non-profit that collaborates with universities and colleges to deliver economic and social development projects all over the world.

Jon Milos, a business professor at Lambton College, coordinates Project One Seed along with “an amazing team of students,” Bowman says.

Before departure on her first trip, Bowman had an important meeting with the team to discuss project goals, logistics and cultural sensitivity, she says.

It was important to understand modesty standards in Zambia and wear appropriate clothing. The Pro-



Kendra Thurston photo

Farmers Helping Farmers volunteers developed this prototype of a reduced-risk pull-behind sprayer and demonstrated it to growers at a field day.

ject One Seed team also learned a different handshake and some basic Tonga, which is the native language in Zambia, Bowman explains.

“Each trip is typically 12 days: a day each way commuting and then 10 days on the ground,” she says. In Monze, the region in which Project One Seed’s representatives currently work, Canadian participants stay in a gated community. They have individual rooms and running water.

“It’s not tough living conditions by any means,” Bowman says. “Each day, we’re typically going out and meeting with a specific village.”

Organizers named the project after the agronomic practice of planting one seed in each hole. Previously, farmers hand-broadcast seed and then dragged a felled tree across the land with an ox to turn the soil, Bowman explains. The one-seed, no-till planting method was so effective that it spread rapidly from farmer to farmer in the region.

Even growers not involved with the project adopted the practice.

“That’s how (Project One Seed) started, and it evolved from there,” Bowman says. “We operate training sessions, which basically train the trainer in a classroom setting, on agronomic practices and safety.”

The project has grown over the years.

“We’re doing follow-up meetings as well. As the project has evolved,

there’s been economic development,” she says. Project One Seed participants review how things have been going and what could be improved, Bowman explains.

Finding a program

If the stories from Project One Seed and Farmers Helping Farmers have piqued your interest in volunteering abroad, you must start by finding a reputable group to work with. But the process can be confusing.

“There is a range of programs,” Tiessen tells *Better Farming*. Some companies are for-profit, some are not-for-profit, and some organizations have branches of both.

Some programs focus exclusively on sending volunteers abroad, “and then others are not-for-profit but linked to much broader initiatives,” she adds. Broader programs include fundraising, preparing joint grant applications and working with partner organizations to build capacity beyond volunteer visits.

Capacity building involves individuals acquiring the skills, information, tools and other resources needed to complete work.

Organizations that are part of the Volunteer Cooperation Program (VCP) are “really highly regarded within Canada, because their volunteers are part of their programming,” Tiessen explains.

The VCP is a Canadian govern-

ment program that pairs skilled Canadians with international development project organizers who could use their expertise.

These organizations carry out long-term projects and have strong relationships with local partners.

Local partnerships are “very much tied into the sustainability of the program,” she adds.

Responsible international volunteering opportunities have sustainability standards and structures that maximize benefits and minimize potential negative effects on the host community, such as distorting the local economy.

Researchers such as Dr. Eric Hartman, the executive director of the Centre for Peace and Global Citizenship at Haverford College in Pennsylvania, and Dr. Cody Morris Paris, the deputy director of academic planning and research at Middlesex University in Dubai, provide helpful information on the ethical standards for international volunteer programs. They focus on the characteristics of fair trade learning.

Although you may be able to identify a program with those characteristics yourself, Tiessen recommends finding a program through the VCP.

When preparing for a volunteer trip abroad, “think about the impact as a longitudinal process,” Tiessen says. “The impact begins before (volunteers) leave in terms of building relationships, creating contacts, doing background work and understanding what the needs are in the partner country and organization.”

While you’re in the host community delivering skills and building relationships, your “emphasis should be on sharing and focusing on mutual benefit. (Volunteers should) go in with an attitude that they have both something to learn and something to give,” Tiessen says.

“That synergy of knowledge sharing is bigger than the idea of the helping imperative,” she adds.

Finally, “the impact needs to be reflected beyond the placement abroad,” Tiessen says. The effort can include maintaining relationships, fundraising, joint project applications and information-sharing once you return home from the trip.

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Improving a volunteer program

Farmers travelling abroad to provide agronomic and animal husbandry training bring a specific, in-demand skill set, Tiessen says.

This agricultural experience can lead to increased capacity, but volunteers should also ensure that they avoid expressing the saviour attitude.

Because of their skills, volunteers from the agricultural community might have a stronger commitment than younger, student volunteers to helping and having a big influence on a community, Tiessen says.

Given that mindset, some volunteers might set themselves up for misunderstandings with the host community or even demonstrate patronizing behaviour.

Volunteers “need to go in with some humility and some interest in learning. I’m not saying that (the expression of the saviour attitude) happens a lot, but we can’t help but have that saviour filter.”

Understanding that you’re in a region to deliver skills and teach residents, but that you also likely have a lot to learn from the host community, is important.

Tiessen asked host communities how they’d like to see volunteer efforts improve. The top three responses were better cultural understanding, increased language training and longer visits.

Not expressing shock over cultural practices such as polygamy and having some basic language understanding can help improve interactions between hosts and participants, she adds.

“The more people know going in and the more open-minded people are, the stronger the relationships are between partners and volunteers,” Tiessen says.

Extending the length of visits can be tricky when you are running a farm back home.

“When given the opportunity to say what (host communities) would like to see changed with volunteer programs, our partners almost unanimously say (volunteers) should stay longer,” Tiessen says. However, “people didn’t consider two-year



Teresa Mellish presented solar lights to members of the Destiny Mboroga Women’s Group near Meru, Kenya. The photo was taken during a November 2019 trip.

volunteers as superior to two-week volunteers. They saw a place for everybody, especially when they were bringing very specific skills.”

Effects on international farmers

Organizations like Farmers Helping Farmers and Project One Seed have had tangible effects on the communities they work in.

For example, Farmers Helping Farmers’ volunteers helped women’s groups improve their access to water, Mellish says. Getting water is a hardship for many women in Kenya.

“The women there that we were meeting were so generous and so gracious,” adds Thurston. “They were passionate about explaining what they grew and why, and were very grateful for the water tanks and drip irrigation lines. They were excited to talk to us about how (these tools) improved their ability to sell (their crops) to the market.”

The farmers mostly practise subsistence agriculture, cultivating between half an acre to three acres of land, but additional water allows farmers to grow some higher-value crops, such as melons or carrots. They can be sold at a market in Nairobi, Thurston explains.

Farmers Helping Farmers’ representatives have also trained women to produce and cook vitamin-rich foods, such as carrots and sweet potatoes, enabling families to avoid

deficiencies in vitamin A, Mellish says.

“For the schools, we’ve established lunch programs,” including gardens and cookhouses for 3,000 kids, she says. “Their school attendance and their marks have improved.”

Dairy farmers in Kenya also benefit from the programs.

“We work with the University of P.E.I. which has the Atlantic Veterinary College. We take vets and veterinary students with us every time we go (to Kenya). They train the women to get more milk and improve the health of their cows,” Mellish explains.

Bowman also observed how Project One Seed empowered farmers to improve their systems in Zambia.

“We’re not there to hand them money, and we’re not there to do the work. We’re there to teach,” Bowman explains. And it’s working.

“In 2019, the producers in that project generated over \$49 million dollars. And all that goes directly back into their economy. When you break that down, it’s over \$6,000 per household,” Bowman says.

The amount is significant in a region where households live on exceptionally limited incomes.

The economic gains from agricultural development have snowballed into increased education and capacity in the region.

“We’ll work on projects and we

go back,” Bowman says. “Sometimes you’re shocked they’ve taken something and run with it, and it’s not something you would ever expect to see.”

Some benefits are certainly mutual and less tangible.

“The feeling of welcomeness that we get upon arrival is just phenomenal,” Bowman says.

“We’ve developed friendships; we’ve developed relationships.”

Effects on you

Working with farmers in Kenya “gave some perspective to everything,” Thurston says.

“There are so many people out there who are just trying to survive. They’re trying to keep their children happy and healthy, and trying to put their kids through school. They’re just trying to cover some of their basic needs,” she says.

“They’re so gracious and so generous. Everywhere we would go, they’d offer us tea and bread. They have so little, but they offer so much.”

For many participants, “it’s a life-changing experience,” Mellish says.

“These women in Kenya whom we work with are every bit as smart as I am and every bit as hard working as I am,” she says.

“They just were born in a place where they don’t have as many resources available. I feel very happy that I can make some Canadian resources available to them.”

That perspective is valuable for all Canadians.

The experience “offered me a lot of growth and perspective on what’s important in life,” Thurston says.

Bowman agrees.

“It’s so humbling – that’s the best word that I can use to describe it,” she says. “The first time I went, I had this sense of empowerment. I was going there to be the teacher. But (teaching) went both ways. I learned just as much as I taught while I was there.

“It’s amazing how sometimes having nothing tangible reassigns the

value of non-monetary things, like kindness and compassion,” she says.

Working with farmers from developing regions provides an opportunity to support the international farming community, but also provides a chance for personal growth.

“A trip like this – with the right team, the right people and the right objectives – will change you, if you let it. I came back from the first trip and my heart was wide open,” Bowman says. **BF**

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OVERCOMING BARRIERS TO INNOVATION IN AG

Farmers and other agri-food innovators must commit to a long-term vision in their search for improvements.



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To succeed in agricultural technology innovation, “you need that value chain to help to leverage the relationship that it has with farmers,” Tyler Whale said.

Farmers are masters of innovation. They regularly problem-solve to overcome challenges in the barn or field with creative solutions.

“Dad started no till in ‘91 through necessity, trying to make things – equipment, fuel and labour costs – a little bit cheaper,” Mike Belan, a corn, soybean and wheat farmer from Lambton County, told *Better Farming*. The Innovative Farmers



Sarah Hargreaves

Association of Ontario named him as the 2020 Innovative Farmer of the Year.

“We kind of realized it was a blessing in disguise that we went to no till because of the benefits for the soil,” Belan said. “As we went down that path, we got into cover crops. ... That’s where more innovation started because we had to find a way to interseed into corn and make it establish, and be able to plant green into a cover crop.”

For Belan and his family, innova-

tion began from an imperative to cut costs, and evolved into a continual learning and improvement process. So how can other producers and entrepreneurs incorporate innovation into their farms or businesses?

To answer that question, *Better Farming* connected with four experts in the agri-food innovation space:

- Belan
- Sarah Hargreaves, the research director for the Ecological Farmers Association of Ontario (EFAO)
- Tyler Whale, the president of Ontario Agri-Food Technologies
- Dr. Colin Yates, the chair of the Centre for Research and Innovation (CRI) at Fanshawe College

Why innovate

Hargreaves runs the farmer-led research program at EFAO, where producers can receive logistical support and a stipend to conduct field trials under farmer-chosen priorities.

Participants have many motivations for trying new things, she said. Some farmers are solving an issue and other growers hope to reap benefits. Still other producers hope to generate data to convince the broader agricul-

tural community that trying new things and farming in different ways is OK.

“Even if the project doesn’t go very well ... the process of going through that scientific method of walking through a protocol, taking observa-



Tyler Whale

tions and being accountable to the program – a lot of farmers really like that,” she said.

So, in innovation, the process is just

as important as the product.

Innovation might be defined a little differently in a business and technology framework.

“In my world, we often mistake innovation with invention,” Whale told *Better Farming*.

“Invention is taking money and generating ideas, (while) innovation is taking ideas and generating a return on investment. ... (Innovation is) the application or the execution of the idea to solve a problem or create benefit,” he explained.

Staying connected through tough times

The agriculture industry has worked so hard to shed light on the importance of mental health. We are breaking down the stigma, opening up, reaching out and sharing the strength we sometimes all need. And there have been a lot of challenges over the last many months that can take a toll on our outlook. Trade, transportation, processing capacity and the impact of COVID-19 are ongoing issues that add uncertainty and stress for everyone throughout the agri-food sector and our rural communities.

These have been unprecedented times. All these uncertainties can be unsettling. We encourage everyone to stay connected and keep in touch to continue supporting each other.

- **Reach out.** Is there someone you know who is particularly isolated or vulnerable, or you just haven't heard from them in awhile. Pick up the phone and check in.
- **Take a break.** When you know you need a change, try and take a mental break from work, even if it's just for a day or just going for a drive.
- **Ask for help.** If you find yourself feeling overwhelmed, stressed or just not sure how to cope, get in touch with family or friends. Try not to isolate yourself.

For more information, please check out the links to mental health resources across the province at ofa.on.ca/resources/mental-health-resources.

OFA: We are stronger together.



In the agri-food industry, innovation can be incredibly diverse.

“Innovation is just so broad and complex and, to me, ag is both the highest- and the lowest-tech sector in the world,” Whale said.

The ag industry may be the least digitized sector, as much of the work and data collection is done by hand. But tractors had autosteer long before autonomous vehicles existed, and farmers measured livestock biometrics long before a person strapped on a Fitbit, he explained.

Innovation is a way to leverage research and creativity, albeit with some risk, to find new ways to bring more benefits to the ag industry.

How we innovate

At the farm level, innovation may seem relatively straightforward, but it certainly involves expertise, management and a vision. For Belan and his family, innovation stems from the goal of improving the land.

“Soil health is definitely the motivation. We’ve really changed our view of farming as soil health first,” he said. “We know that this is the direction we want (to go), so we just make it work.”

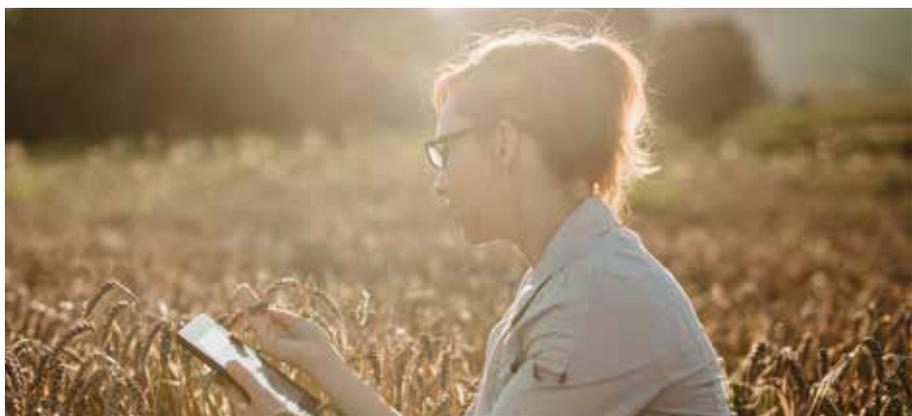
He has an uncle who is a good fabricator who can alter machinery. And, since Belan has no livestock to care for, he has more time to focus on management, he explained. “We kind of figure out our own idea and run with it,” Belan said. “We seem to go all in and make it work.

When we try something, we try it on all the acres.” This process involves a lot of trial and error, as well as buy-in.

Of course, some farmers may opt to begin trials on a smaller scale to mitigate risk and expand their efforts as they learn from results.

For producers who may need more external encouragement or accountability, farmer-led research and peer support can help kick-start innovation on the farm.

“When you have a field day with



hobo_018/Stock/Getty Images Plus photo

For producers who may need more external encouragement or accountability, farmer-led research and peer support can help kick-start innovation.

farmer-to-farmer information sharing and you combine that with farmer knowledge, it’s a really powerful combination. It’s the farmers who are producing this rigorous knowledge. (That combination is) a gold mine for behaviour change in agriculture and for innovation too,” Hargreaves said.

“We’ve seen the number of farmers participating, the diversity of trials, and the rigour of the trials increase” since the program launched in 2016, she added.

Producer-led research and innovation are not novel ideas. In the global south, farmer participation is a key component of plant breeding.

In Ontario, participation can help encourage producers to take a methodical approach to trying new things.

“Farmer-led research is a lot about capacity building in the community,” Hargreaves added.

In terms of agri-food innovation off the farm, some resources are available to bring innovations to market.

In academia, “we invent very efficiently,” Whale said.

Research from academic settings can sometimes translate into commercial products.

“We have programs that are part of the academic ecosystem that capture intellectual property and protect it, and try to transfer this intellectual property to industry,” Whale explained. “Most of the time, the (products) still have a long way to go before they become commercially relevant.”

Innovators in the agri-food space can also access help through some publicly funded programs.

“The government is critical in innovation. Oftentimes, that’s in the support of accelerators or incubators or grants to entrepreneurs or companies who are doing research and development and eventually plan to commercialize outcomes,” Whale said.

However, a lack of knowledge specific to the agricultural industry exists in many of those business accelerator or commercialization ventures, he added.

Most public innovation programs



Dr. Colin Yates

lack “the deep expertise that you might need or (are not) deeply connected to farmers and farm organizations,” he said.

Fanshawe College leadership identified the need to support innovation in the ag industry and are building a program to fill this need. The college created its Centre for Advanced Research and Innovation in Biotechnology (CAR-IB) lab and developed a partnership with Bioenterprise Corp., an agri-tech commercialization accelerator based in Guelph.

Now, Fanshawe College is helping companies overcome barriers in the research, development, and scaling of innovative technologies.

“A lot of companies are seeing food innovation as an exciting space to be,” Yates told *Better Farming*.

“Our mandate is to help these companies that are looking to scale or to bring a new product to market,” he explained.

Obstacles to innovation

Whether you’re on the farm or in a workshop or laboratory, agri-food innovation takes some investment.

On the farm, that investment not only includes money, but additional management hours and labour, which can pose obstacles for some producers, Belan explained.

“A lot of farms are run by one or two people. It really takes a lot of work to be innovative and try something new, as well as keep the rest of the operation functional,” he said.

“There’s definitely risk,” he added. Overcoming the risk and managing the additional work takes determination and commitment.

“You must have that vision of a long-term outlook,” Belan said.

Hargreaves agreed that risks and workload are sometimes barriers for farmers.

Farmer-led research is sometimes “not a great entry point for a lot of people, because it is a lot of work,” she explained. However, the EFAO stipend provides some risk mitigation as a financial incentive.

Stigma may also exist around innovating on the farm.

“For some people, (a barrier) is peer pressure. When you try something new, it may look messy. It may look like you’re a bad farmer. There’s a lot of social stigma,” Hargreaves explained.

“Barriers to adoption are complicated – I think it varies by individual and age range,” she added. But tools like farmer networks boost confidence, and cost-sharing can reduce risks.

Agri-food technology innovators can face challenges breaking into the market because of some unique aspects of the industry.

The industry is “very poorly coordinated. We have dozens, if not hundreds, of national producer

organizations and about the same number provincially,” Whale said. The relatively small portion of the general population that farms is split into many organizations and commodity groups with diverse challenges and, often, little collaboration exists between sectors.

To succeed in agricultural technology innovation, “you need that value chain to help to leverage the relationship that it has with farmers,” Whale

said to *Better Farming*.

Farmers don’t have time to conduct extensive research on hundreds of innovations that are coming to market, Whale explained. “They interact through their trusted networks,” including other farmers, producer groups, and local dealers to gain information.

“We have to figure out between farmers and farm organizations what their role is going to be and how they

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Fanshawe College lab technicians will use the force tensiometer to help industry partners validate cleaning in the food industry, and the wetting behaviour of ingredients.

might facilitate” access to innovation, Whale said.

Research institutions may help, but only if they’re “capable of extending in a broad enough way that speaks to the huge diversity of management techniques and conditions under which farmers farm,” he added.

Few producers want to be the first one to try something; they often want to see it being successful first.

Additionally, the “sales cycle is very long in agriculture,” Whale said. “You have to make very conscious decisions about what you do in ag, because you can make the decision once per year.

“There are so many confounding factors that make innovation very difficult in agriculture,” he said. “Simply put, there’s not enough synergy or coordination, and there’s massively insufficient investment.”

Opportunities for innovation

Fanshawe’s CRI and CARIB lab are addressing the obstacles that agri-food startups face.

“We’re starting to build a real capacity around helping food innovation companies,” Yates said. “There are a lot of interesting companies out there right now that need our service, because being in something like food processing is a very capital-intensive exercise.”

In an industry where expensive equipment and testing are needed, partnerships like the one between Bioenterprise Corp. and the CARIB lab give startups access to shared resources to ease the initial financial burden.

“Anything that requires a lot of physical assets is always difficult to raise money for,” Yates explained. “It comes down to those big capital assets that can be shared in some capacity.”

Waterloo successfully created a nurturing ecosystem that provides resources for tech innovators. London is becoming a similar hub for agri-food innovators.

Other institutions with agricultural expertise could follow a similar model and help to connect inventors with the resources they need, and with the broader ag community.

Yates hopes the CARIB lab can become a trusted resource for agri-food innovators.

“We’re not going to be competing against any regular third-party laboratory. ... Our intention is to come into the niche that (these labs) can’t serve very well in these new companies, and put them on the right track so they can become customers” of larger labs and stimulate the market, he explained.

Can lessons from the technology and business innovation ecosystem

translate to trying new things on your farm? Absolutely.

As Whale emphasized, successful innovation requires investment and cohesion within the industry. The same message is echoed in peer support through producer-led research and the buy-in demonstrated by the Belan family on their farm.

“Most farmers are really good researchers without even knowing it, because farming requires that you observe and you (repeat and improve). You’re always changing,” Hargreaves said.

If you’re going to try something new, it’s important to commit.

“Don’t think of this as a fad,” said Belan. “You’re going to have failures.”

Sometimes fields may look bad and seasons may be difficult. Under these conditions, you may be tempted to revert to old practices.

So, “you really have to change your mindset” to focus on long-term goals, he explained.

“You’ve really got to buy into (innovation) ... It’s a never-ending venture,” he added.

True innovation that leads to sustainable returns for your farm or business is not about a single test plot or settling into what is seen currently as an innovative system.

Rather, innovation is about continually reaching for opportunities to improve. **BF**



THE EFFECT OF GLOBAL MONETARY MEASURES

As governments enact measures to protect citizens and economies, the ag markets should benefit.



Singh_Lens/Stock/Getty Images Plus photo

Despite COVID-19's destruction of global commerce, the demand for ag products will always be supported.

As the COVID-19 pandemic strengthened its grip on the world in late March, normal life and commerce were brought to an almost standstill.

As of mid-April, over 1.9 million reported cases existed worldwide, including 120,863 deaths, according to Johns Hopkins University. As there is no known cure, most affected nations resorted to lockdowns, shutdowns, isolation and social distancing to control the spread of the virus.

The pandemic caused stock markets and commodity prices to plunge across the world.

The International Monetary Fund (IMF)-advanced G7 countries (Canada, France, Germany, Italy, Japan, the United Kingdom and the United States) sanctioned multiple health, economic and financial stability measures. The countries made these moves to boost public confidence and economic growth by

protecting jobs, businesses and the global financial system.

The IMF also sought to encourage global trade and investment. Central banks stepped in to prevent funding

and liquidity pressures in credit markets, as these financial institutions attempted to prop up the floundering economies.

The IMF is an intergovernmental



Source: Q1 Info Systems Inc., Chicago, Illinois

Strong consumer demand during the COVID-19 pandemic caused a V-shaped recovery in March wheat prices.

MOE'S MARKET MINUTE

economic organization focused on protecting the stability of the international monetary system.

The U.S. Federal Reserve cut the American borrowing rate by a total of 1.5 per cent in March to between zero and 0.25 per cent. The Federal Reserve initiated other measures too, including buying US\$700 billion (C\$974 billion) in Treasury and mortgage-backed securities, and funding programs to improve liquidity and satisfy investor demand for cash. The latter move is essentially the same as printing more money.

The Bank of Canada also dropped the interest rate during March by a total of 1.5 per cent, bringing it down to 0.25 per cent.

Canadian policymakers introduced other measures like insured mortgage purchases, the Bankers' Acceptance Purchase Program, the Bond Buyback Program and adjustments to existing liquidity programs.

Besides these financial measures, central governments moved to inject stimulus packages to prevent nationwide economic collapses. By late March, the U.S. government approved US\$2 trillion (C\$2.78 trillion) to be injected into the nation's economy.

Almost simultaneously, Canada approved a C\$27-billion aid package and C\$55 billion in the form of tax deferrals. The Canadian government also said that the hard-hit airline and energy sectors could expect necessary



nastya.ph/Stock/Getty Images Plus photo

Governments' quick and commendable actions to support the global economy will put money in the pockets of consumers.

support measures.

As we saw with the United States and Canada, the scale of liquidity, stimulus and support measures in other major economies around the world is unparalleled in history. The recent government measures even

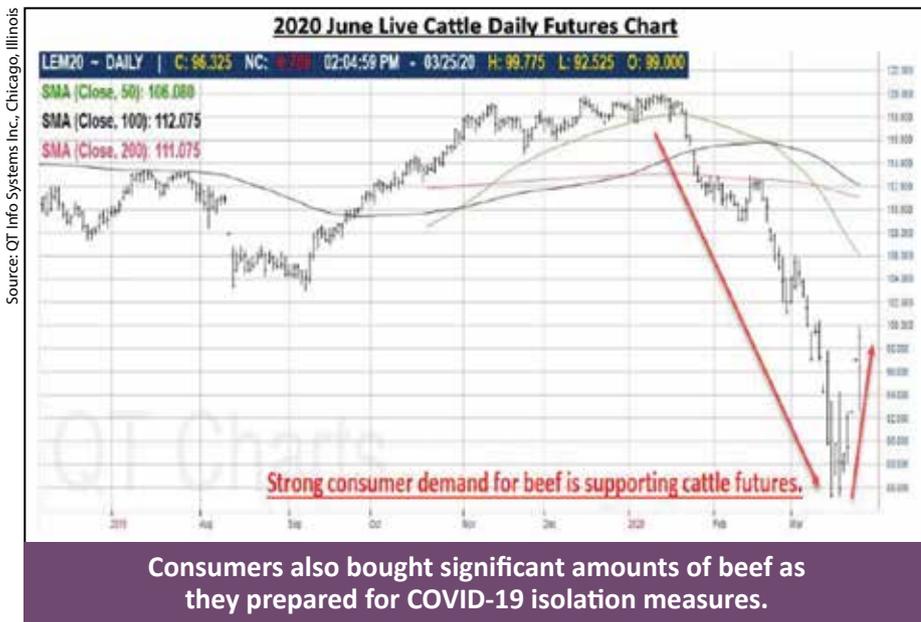
outstrip the programs initiated during the 2007-08 Great Recession.

Countries heavily exposed to COVID-19 will probably end up with combined spending and public loan guarantees of up to 20 per cent of gross domestic product (GDP) in 2020.

Ultimately, what matters is whether governments and central banks successfully level out the economic risk through their unprecedented actions. Doing so would avoid a domino effect that keeps alive the hope of a V-shaped economic recovery.

In such a scenario, the economy would be able to start recovering from this drop fairly quickly and not spend too long at lower market levels.

China and South Korea initiated the rebooting of their economies sooner than other nations. As of late March, the two Asian countries were slowly getting back on their feet, providing an encouraging example for the rest of the world.



The U.S. economic stimulus aid includes a US\$14-billion (C\$19.48-billion) increase in funding authority for the U.S. Department of Agriculture's (USDA's) Commodity Credit Corp. that will help producers attain more direct aid. The government apportioned US\$9.5 billion (C\$13.22 billion) in assistance for livestock, fruit and vegetable producers.

The USDA's Supplemental Nutrition Assistance Program received an additional US\$15.5 billion (C\$21.56 billion) and the U.S. child nutrition programs received another US\$8.8 billion (C\$12.24 billion).

In Canada, the federal government announced in March a C\$5-billion increase in lending capacity for the ag industry. These loans are available through Farm Credit Canada and will be especially beneficial to ailing ag sectors.

All these American and Canadian economic measures will support the demand for ag products when the rest of the economy is gradually climbing out of the COVID-19-induced slump.

Let's not forget, however, that the

world will always need to be fed. So, despite COVID-19's destruction of global commerce, the demand for ag products will always be supported.

Governments' quick and commendable actions to support the global economy will put money in the pockets of consumers. They'll continue buying essentials like food, other basic household items and medicines.

We already saw a demonstration of this trend in March, when consumers resorted to hoarding food and cleaned out grocery shelves. These large purchases propped up wheat and meat prices. Even when the stock market fell, wheat, soybean, soy meal and livestock futures rose.

The ag markets received further support when governments approved their respective economic stimulus measures in late March. These actions improved the market psyche and gave traders hope of an economic revival (albeit slowly).

The stock and commodity markets started to recover in late March. Speculative investor money returned

to the various asset classes as investors' risk appetite improved based on governments' convictions to guide the world through these uncertain and testing times.

As we navigate this global crisis with the help of the largest global natural disaster relief program, central banks must be careful that they do not raise interest rates too quickly. These financial institutions must be patient, enacting new measures step by step. Central banks may need to employ large-scale asset purchases in the bond market to control long-term interest rates.

The ag industry will benefit from the stability that these global relief measures provide. **BF**

Maurizio "Moe" Agostino is chief commodity strategist with Farms.com Risk Management and Abhinesh Gopal is head of commodity research. Risk Management is a Farms.com company, as is Better Farming.

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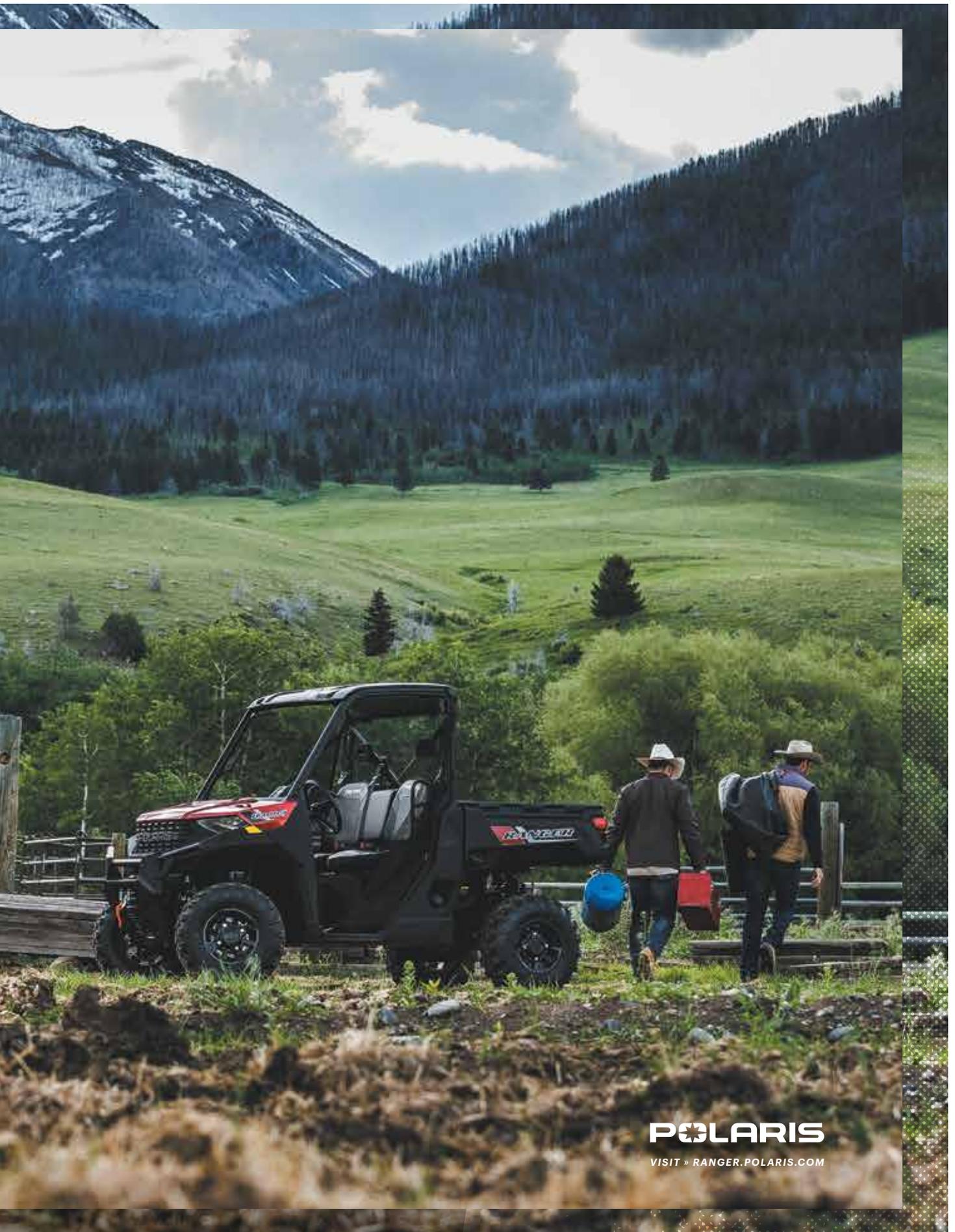
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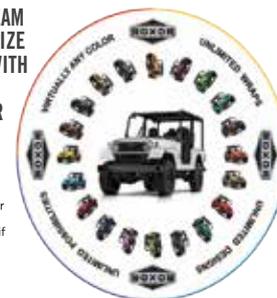
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by DALE COWAN

LET'S REVIEW SOIL TEST TRENDS IN ONT.

How can our yields increase while our soil test values decline? What does this mean for the future of ag?

lovelyday12/istock/Getty Images Plus photo



We have always believed higher yields come from higher fertility levels. While this statement is typically true, limits exist.

In general, soil test values have steadily declined over the past 20 plus years.

Nutrient levels on traditional row-crop farms are decreasing, while areas with a concentration of livestock operations have fields where soil test levels are not declining as quickly or are perhaps even increasing.

We have always believed higher yields come from higher fertility levels. While this statement is typically true, limits exist. Or, rather, it's more accurate to say that soil test levels exist at which expected yield increases from added fertility become limited or non-responsive.

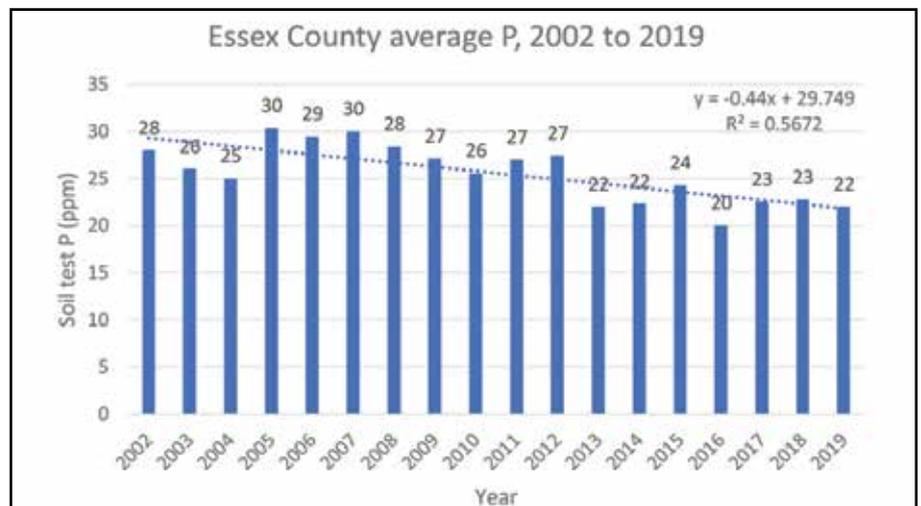
In the early 1990s, we were in the beginning phase of precision agriculture. It started with grid soil sampling and, much to our surprise, the highest soil test values were often associated with the lowest-yielding areas in the field.

When yield monitors became more

commonplace, we could confirm that high-yield areas drew down fertility levels faster than low-yield areas and uniform applications of nutrients created differentials in nutrient levels

across the field.

High-yield areas didn't receive enough nutrients from uniform fertility programs and low-yield areas received too much. This finding created



In Essex County, the dotted trendline for phosphorus (P) soil tests clearly shows a decline. The slope of the trendline suggests that soil test P will drop below 20 ppm by 2026 if we make no changes.

the demand for variable rate fertility applications to balance the areas in the field with more appropriate nutrient rates driven by yield potential.

Variable rate nutrient applications occur on a small percentage of acres across Ontario.

Based on my experience, farmers make variable rate applications on about 25 per cent of the acres in some jurisdictions and this figure increases annually.

Notably, these services have not necessarily been universally available.

Generally, over the past two decades, we have seen an increase in the availability of improved crop genetics, general farm management, better weed and plant health controls, earlier planting and better equipment.

These improvements have led to better yields, but not necessarily to increases in fertility programs to match crop removal. This situation has contributed to a steady decline in soil test levels, most notably in phosphorus (P) and potassium (K).

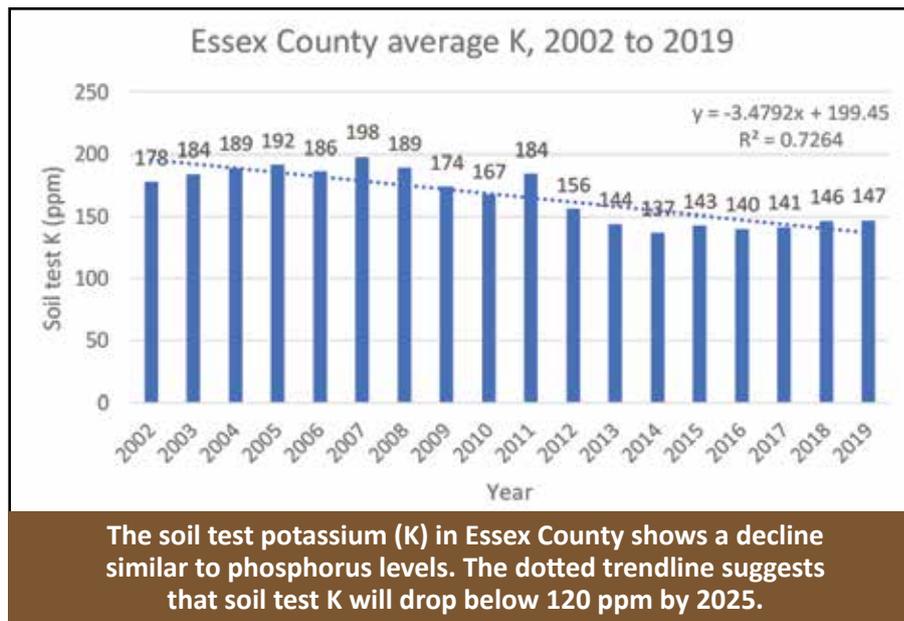
We haven't necessarily seen a negative economic impact – yet.

How can fertility levels decline while yields continue to increase?

At the SouthWest Agricultural Conference in 2016, Dr. David Hooker shared research indicating that row crop yields were consistently higher

when soil test P was greater than 20 ppm and soil test K was greater than 120 ppm. Hooker is an associate professor in field crop agronomy at the University of Guelph's Ridgetown Campus.

Using those thresholds, let's examine soil nutrient trends.





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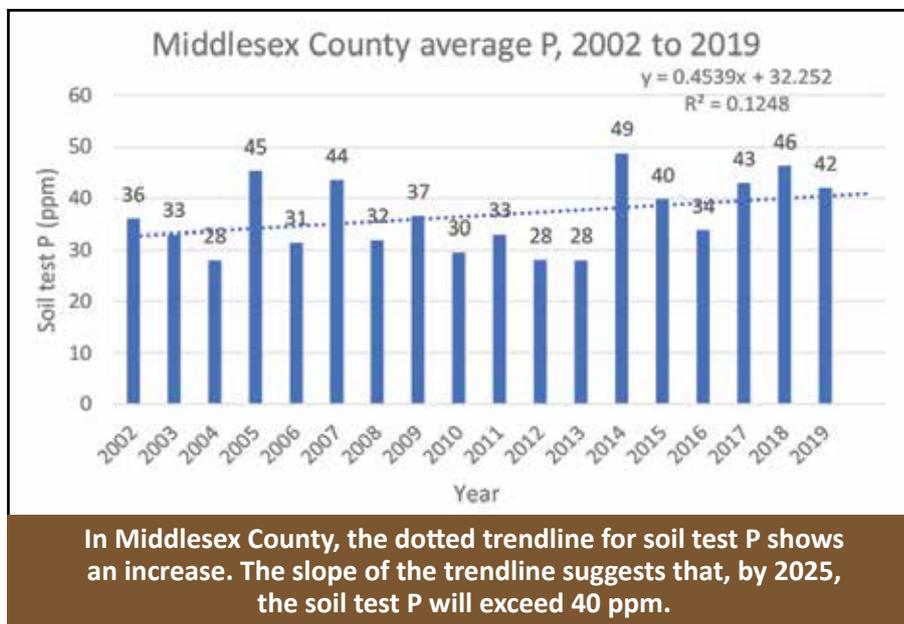
The following information is from an AGRIS Co-operative Ltd. and Wanstead Farmers Co-operative Ltd. database I use to track soil fertility trends. The graphs are compiled from an aggregated database of 121,000 soil samples from the past 18 years from Essex, Lambton, Chatham-Kent, Elgin and Middlesex counties.

I have highlighted the Essex County and Middlesex County soil sample datasets for discussion purposes.

The soil test analysis for Essex County reveals that the reason yields are increasing while soil tests are decreasing is because we still have good soil test levels in the short term to support high yields. But the soil test trendlines for both P and K are dropping in the county.

The longer-term question is at what point will soil test levels become yield limiting if we don't increase nutrient application rates?

The only way that soil test levels decline is when the removal of nutrients exceeds the rate of application. The decline in soil test P in Essex County is equivalent to shorting the crop needs by 30 lbs. of MAP each year per acre and 115 lbs. of muriate



of potash.

A lag in yield decline will exist.

However, I predict that, by the end of the decade, yield inconsistencies may start to develop. Within the following decade, I anticipate that nutrient deficiencies may become more evident.

Essex County farm operations are predominantly cash crop with a very limited livestock base and, as a result, a limited amount of supplemental

nutrient sources. The crop rotation is heavily weighted toward soybeans with 60 per cent of acres always in soybeans.

Until recently, farmers' fertility applications for soybeans were limited. This crop removes 89 per cent of the P it takes up in the soybean itself and 1.5 lbs. of potassium (K₂O) per bushel. Although soybeans yield fewer bushels per acre than corn, soybeans' nutrient requirements rival those of

Crop uptake and removal

Method	Yield	P ₂ O ₅ (lbs./ac)	K ₂ O (lbs./ac)
Soybean uptake	45	45	150
Soybean removal		40	69
Corn uptake	170	103	213
Corn removal		62	46
Wheat uptake	80	57	130
Wheat removal (grain only)		45	29

This chart shows the P₂O₅ and K₂O uptake and removal for soybeans, corn and wheat.



We must keep our soil tests current, and follow recommendations from our certified crop advisors and best management practices for proper application of all nutrients.

FluxFactory/istock/Getty Images photo

corn. Winter wheat's requirements fall between the rates of corn and soybeans.

When we look at the aggregated soil tests for Middlesex County, we find a different story than in Essex County. In Middlesex County, the trendline for the soil test P is actually increasing while the trendline for the soil test K is decreasing.

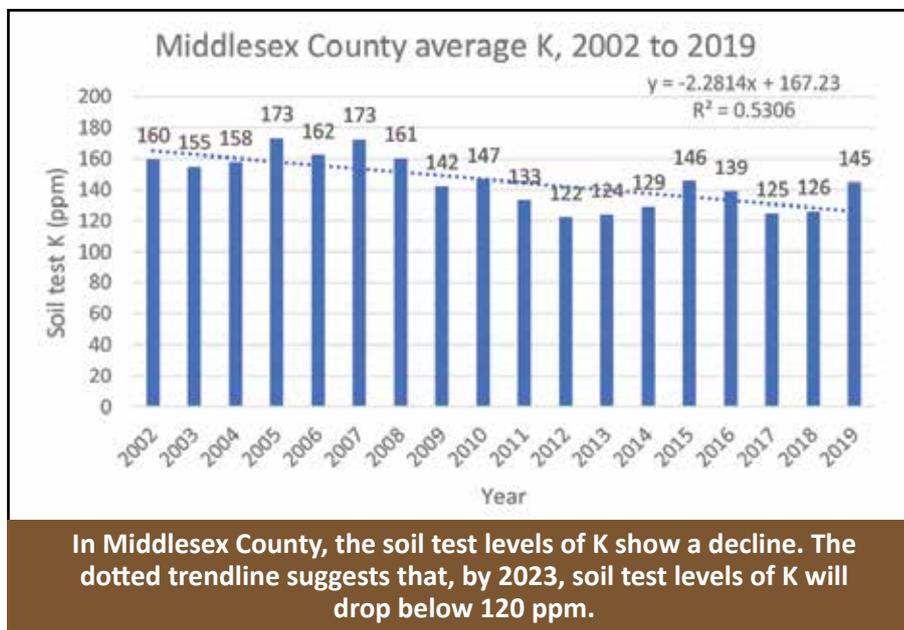
Increasing soil test levels of P in Middlesex County suggest application rates of this nutrient exceed annual crop requirements by approximately 16 lbs./ac of P₂O₅, 30 lbs./ac of MAP or roughly a 1,000 gallons/ac of hog manure. In contrast, the trendline shortfall for soil test levels of K represents the equivalent of 76 lbs./ac of muriate of potash per year.

The farm practices in Middlesex County are different than in Essex County. Middlesex County has a more comprehensive livestock base and a more complex crop rotation.

Together, these production practices support the soil test trends. Middlesex County's more complex crop rotation includes corn silage, forages and perhaps more grains. This rotation removes more K from the soil.

A crop rotation where the whole plant is harvested increases the crop removal of all nutrients.

But let's look at the discrepancy between the P and K trendlines. Manure applications tend to supply more P than K depending on the livestock



class. Additionally, Middlesex County farmers may apply more biosolids, some of which are typically higher in P and lower in K.

Takeaway message

If we don't change our nutrient management practices, it will be interesting to observe changes in crop productivity over the next two decades.

I see conflicting land management practices converging sooner than later. We must address declining soil fertility and protect surface water from potential nutrient loading.

The 4R Nutrient Stewardship Program that embraces managing the source, rates, timing and placement of

nutrients will be ever more important as we make individual management plans.

The soil test trendlines I discussed in this article represent an aggregate of average values. You must understand what is happening on your farm(s). We must keep our soil tests current, and follow recommendations from our certified crop advisors and best management practices for proper application of all nutrients.

Considering that most nutrient losses occur in the non-growing season, we must carefully consider when we apply nutrients to reduce those potential losses.

While the 4R principles mentioned above are all equally weighted in importance, if I had to pick just two, they would be the timing and placement of nutrients.

In some sensitive watersheds, we may see the need for in-crop applications of nutrients at the start of the spring growing season or, at least, the timing of application aligned to the growth stage of greatest need to mitigate potential losses.

Agriculture has always had its challenges. However, the best part of the industry is that we always rise to overcome them. **BF**

Dale Cowan, CCA-ON, 4R NMS, is a senior agronomist with AGRIS Co-operative Ltd. and Wanstead Farmers Co-operative Ltd.

Crop removal

Crop	Yield	P ₂ O ₅ (lbs./ac)	K ₂ O (lbs./ac)
Alfalfa	8 tonnes dry matter (2 years)	105	462
Corn silage	10 tonnes dry matter	114	235
Spring cereal	80 bu/ac	31	26

This chart shows the yield and crop removal levels for alfalfa, corn silage and spring cereal.

SET UP YOUR FARM FOR SUCCESS IN PLANTING

Follow the tips outlined below to start the 2020 growing season on the right foot.



I figure your time at planting is worth, on average, \$200/hour.

“A farmer only has so many crops to plant. You want each one to be perfect,” said Tom Melady, a friend and former farmer from Dublin, Ont. At the time, we were looking at his white bean fields where a terragator had left serious ruts while applying a pre-emerge herbicide.

Here are some thoughts to help make the 2020 season near perfect.

Create a plan

To have a successful planting season, you must have a plan. You need to plan what hybrid or variety you'll plant in every field, as well as seeding rates, planter and drill settings, and fertilizer and herbicide programs.

You can get organized on rainy days, too. For example, you can figure out the herbicide rate and quantities on such days so that, when it comes time to fill your sprayer, you just must double check your rates.

And don't be afraid to ask someone about your rates and mixtures. A lot of new products and combinations of co-packs and registered treatments are on the market. It's better to make sure your herbicide program is sound.

You should make your crop plan available to everyone involved in your operation. That way, someone else can help ensure you have the right products on the right fields. Your time at planting is worth, on average, \$200/hour, I figure.

Planting depth

Planting depth is critical. Too often, some corn is planted too shallowly. Corn should be planted between 1.5 and two inches (3.8 and 5.1 centimetres) deep. You should take this measurement from where your foot lightly pushes down soil to the top of the seed.

And you must check every row. Using the same setting on each row does not ensure the same depth across the width of the planter. Probably the setting you used at the end of the 2019 planting season will not be right for the start of this year.

As the season unfolds and you move to different fields, you must constantly check planting depth. If someone makes a delivery to you in the field, have that person check planting depth as he or she waits.

Some people suggest we should plant three inches (7.6 cm) deep on loamy soil. The reasoning behind this suggestion is to get enough moisture to ensure even emergence. While this strategy could work, you're more apt to have uneven emergence due to cold soil in parts of the field at the three-inch (7.6-cm) depth.

Planting depth is also critical with alfalfa. Typically, stand failure related to planting depth is caused by the seed being too deep. I like to see some seed on top of the ground to ensure most of the seed is not planted too deeply.

I have seen one notch difference on a no-till drill make the difference between good and poor alfalfa establishment in a field.

Farm maps

If you are using a custom operator or having product delivered to a field, provide the individual or company with detailed maps. To tell someone that they are going to the old Jenkins farm, or the farm kitty-corner to the DeGroot farm, is not good enough.

Drop off maps or take pictures of



Planting depth is also critical with alfalfa.

maps and send them to your supplier. If you do not have a map, take a screenshot of Google Earth showing the farm with appropriate landmarks.

If you are spraying a dicamba product, be sure to consider the crops that are planted in the adjoining fields. Label restrictions dictate when and where you can spray this herbicide. Don't expect custom sprayers to apply a dicamba product unless they know the adjacent crops.

You may have to change your herbicide plans if a neighbour is planting a dicamba-sensitive crop next to your field. And be sure you have the correct nozzles to minimize off-target movement.

BASF offers a good online tutorial

about spraying dicamba. Everyone who plants dicamba-tolerant soybeans, and especially those individuals who spray dicamba, should watch the video.

Crop input orders

After working for 25 years at retail outlets, I know how hectic they are during the spring. It helps if you can think ahead about what products you need and when you will need them delivered.

If you order five tonnes of fertilizer to be delivered in 48 hours, that gives your ag retailer notice to help plan work schedules. Then, if you are not ready for the product when you originally planned, you can postpone

the order and free up some of their time. Better to book ahead and end up needing to postpone or revise an order than to order and expect immediate delivery.

And if you are using a rented spreader and you damage it, please tell staff at your ag retailer. They may not have time to check every spreader before it goes back out to one of your neighbours.

Positive attitude

You must keep a positive attitude at planting. I suggest not listening to the news because bad news can affect your planting attitude. If breaking news is released on closures or the spread of a virus, you can't do anything about it. You should simply continue to follow the directives of government officials and health care providers while getting your crop in the ground.

Turn the radio to a favourite station or listen to SiriusXM or downloaded music. And avoid talking to the people you know who tend to have a negative outlook. Stay positive.

Finally, work safely. Farming is a very dangerous occupation. You must take regular breaks. It may seem like a waste of time but taking a 10-minute break can help you reflect on what you did and what you need to do.

Have a great planting season. And be happy. **BF**

Consulting agronomist Patrick Lynch, CCA-ON, formerly worked with OMAFRA and Cargill.



You should plan and document what you'll plant in every field.



CANADA
4-H Ontario

4-H ONTARIO GOES DIGITAL

by Sheena Switzer, communications manager at 4-H Ontario

2020 will be a year for the record books. We have faced unprecedented changes with the impact of COVID-19 and its arrival in early March.

4-H is a program that historically has placed much of its focus on the “hands on” and our motto is “Learn to do by doing.” When COVID-19 struck, the team and volunteers at 4-H Ontario knew we had to pivot our direction and we had to do it quickly.

Our job as an organization and our passion as 4-H’ers is to inspire positive youth development. We strive to build youth as leaders in their community and the world. We teach resilience. In March of this year, the teachers became the students. 4-H Ontario’s programming team, led by long-time 4-H member and staffer Marianne Fallis, put their heads together to find ways to adapt the 4-H curriculum to a digital experience. At the same time, leaders of clubs all over Ontario were having the same conversations about how to bring virtual 4-H programming to their communities.

Early on, 4-H Ontario recognized that with the closure of schools in Ontario along with the suspension of 4-H in-person programming, 4-H Ontario was in a position

not only to serve our members, but also the broader community of parents and caregivers looking to continue supporting their children’s education from home.

Because of 4-H’s trusted experiential-learning-based curriculum and our “Learn to do by doing” approach, we were able to compile a variety of hands-on activities that can be done at home, independently or as a family.

The 4-H Ontario’s Online Explore 4-H Project offers 30 different activities to choose from for youth ages 9-21. The resource includes samples from many other 4-H projects such as Adventures in STEM!, Dairy, Beef, Scrapbooking, Craft, Digital Photography, Outdoors and more. These projects all include activities that can be done at home with adult supervision and encourage critical thinking, problem solving and career development. Youth can choose which ones they would like to complete and submit them by June 1 for project completion credits in the 4-H program. For those who are unfamiliar with 4-H, the Online Explore 4-H Project offers a chance to test out some of the many opportunities available through 4-H.

For younger kids, the 4-H Ontario’s Cloverbud at Home Experience offers a wide range of club-type activities for youth ages 6-8. Like the Online Explore 4-H Project, the Cloverbud at Home Experience is one that is completely self-directed and available online. The project resource with all of the instructions is available for download and can be submitted for project completion. There are 35 activity options to choose from and kids can earn completion credits for completing sets of 10 activities. Activities include everything from making a cow door-hanger craft, making pumpkin patch pie, learning about heritage, outdoor activities like rock painting and making clay boats, and so much more!

Throughout your online 4-H experience you’ll be supported and encouraged to join and share your activities in our online virtual connection space. Photos, stories and feedback are strongly encouraged. Over 150 participants have already joined the online adventures being offered by 4-H and more youth are getting involved every day!

Never ones to shy away from a challenge, 4-H volunteers have also stepped up to meet the challenge of social distancing requirements facing our world. They are adapting programming, using video conferencing software to engage youth and host online club meetings. The Chatham-Kent 4-H Association is hosting an online bike club, Waterloo is hosting an online Maple Syrup Club and South Simcoe is hosting an online Games Club based on the 4-H project Sporting Chance. Every day we are hearing of more opportunities for virtual clubs!

Go for the Gold (GFTG) is another important part of the
Continued on page 56




PROUD SUPPORTERS OF 4-H

Meet the 2020 4-H Ontario Ambassadors:

- Faith Emiry – Sudbury**
- James Gilchrist – Niagara**
- Caitlyn Kolb – Peel**
- Jasmine Gillyatt – Brant**
- Marissa Lester – Lambton**
- Lauren Bos – Huron**

Congratulations!

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CANADA
4-H Ontario

4-H in Ontario

Continued from page 54

4-H experience. The Go for the Gold competition is a great opportunity for 4-H members to increase their knowledge of 4-H project materials, agriculture, food, community events and much more, in a fun, team-quiz style competition. Wellington 4-H has hosted two local GFTG competitions using video conferencing software and has had great success. The culmination of this event is the provincial competition that takes place at the Royal Agricultural Winter Fair in Toronto in November.

"The dedication, passion and innovation of our staff and volunteers is clear to see in the way we have been able to re-invent how we do the work we do. Our ability to do this is based on our firm commitment of why we are here, to contribute to the positive development of our youth," said Christine Oldfield, executive director of 4-H Ontario.

4-H'ers are a group known for their innovation, their ability to adapt and to handle challenging situations. COVID-19 has brought unprecedented challenges, but at 4-H Ontario we are still working to provide a sense of community, of support and of connection. We will continue to adapt and to provide new online resources to youth and families, and we will continue to be the leaders in positive youth development.

For more information on 4-H Ontario's online project resources, please visit us at 4-hontario.ca/youth and follow us on Facebook and Instagram.



**4-H Goes
DIGITAL!**

Take part in our online 4-H learning opportunities!

www.4-hontario.ca/projects



A MESSAGE FROM 4-H ONTARIO EXECUTIVE DIRECTOR CHRISTINE OLDFIELD



When I accepted the position at 4-H Ontario, I did not anticipate navigating a global pandemic as a part of my first week on the job, but I learned pretty quickly that 4-H'ers are an innovative, resilient bunch that rise to the challenge.

These are indeed challenging times for many non-profits around the globe. 4-H Ontario is no different. With #GivingTuesdayNow, the global day of philanthropy on May 5, I want to extend the importance of giving to 4-H Ontario now more than ever.

4-H Ontario has shown outstanding leadership in adapting its program offering to include fully immersive online learning opportunities that youth and volunteers can access remotely. We offered two introductory online projects, with over 60 activities that families can access free of charge to help encourage continued learning at home.

Please help us continue our mission of helping support the skills that youth need to navigate these trying times, to share our positive youth development programming to more youth, and to enable us to adapt to this changing world quickly and efficiently.

Your unrestricted donations will go directly to keeping our doors open so that we can continue supporting positive youth development programming now, and into the future.

by
**RALPH
WINFIELD**



TRACTOR POWER AND CONTROLS MAY CHANGE

Manufacturers are exploring the possibilities of electric and autonomous equipment.

Over the last 30 years, we have witnessed significant increases in the size of tractors and associated equipment such as planters. These changes allow operators to cover more acres per hour.

Unfortunately, operators can face challenges moving the large equipment from field to field or from farm to farm. Narrow rural roads with little or no shoulder width have become an issue. Roads are designed to facilitate snow removal, not the movement of large, wide farm machinery. Many dual-wheel or four-wheel-drive tractors require more than half of the road width. Larger units also contribute to concerns about soil compaction, so we must plan carefully to alleviate this issue.

Auto-steer

Because of the wide working widths of farm machinery, equipment manufacturers have designed many systems to permit hands-free driving in the field. This feature has eliminated the need for markers systems and allows the driver to focus on other operational issues.

Auto-steer systems have become essential to maintain full output capacity of large combines with 40-foot headers.

As a long-time combine operator, I remember the need for a seat-of-the-pants reaction to recognize vibration caused by the loss of a straw chopper hammer. The response had to be immediate! Can equipment manufacturers build in that reactive response?

Historical facts

In the 1830s, Robert Anderson, a Scottish inventor, was credited with the development of the first electrical vehicle. By 1859, rechargeable batteries became available. They were the lead-acid batteries that most of us are familiar with.

By 1899, Baker electric vehicles



Solectrac Inc. photo

Solectrac's eUtility 40-HP equivalent electric tractor is a quiet, powerful, zero-emission machine suitable for most farm and utility tasks. This small tractor is fully battery powered but is not autonomous.

became popular with urban residents, as these vehicles were easy to drive and did not need to be cranked. Although people were not concerned about pollution in those days, these vehicles also did not contribute to that problem.

In 1900, Ferdinand Porsche, the creator of the sports car, developed the first hybrid electric car. It was powered by batteries but used the gasoline engine to recharge these batteries.

In the early 20th century, Ford's Model T dealt a serious blow to electric vehicles.

Between 1920 and 1935, higher-quality crude oil also made gasoline cars and tractors more popular.

During that same period, many

equipment manufacturers designed tractors to start on expensive gasoline and run on cheaper distillate fuel. This heavier but cheaper fuel provided slightly reduced horsepower.

Many higher horsepower tractors such as International Harvester's Farmall M or W6 carried small gasoline tanks and had dual manifolds into the late 1940s.

Today, batteries have a much larger charge capacity than the early versions. Batteries can be recharged through solar collectors or the power grid.

Last summer, someone operated an electrically powered motorboat on Lake Huron. The large roof area served as a solar collector.

People also use electrically pow-

John Deere photo



This large battery-powered John Deere GridCON tractor operates autonomously.

ered golf carts and scooters.

About 3 per cent of the world's new vehicles are electrically powered, estimates suggest.

From 1969 to 1974, I travelled the Don Valley Parkway daily. It was not the parking lot that it has been in more recent years. With the usual vehicle load pre-COVID-19, the Don Valley Parkway and many other urban roadways made significant contributions to air pollution. Can electrical vehicles make a difference?

Research efforts

Through small-scale projects, researchers are studying autonomous tractors to plant and harvest crops. Some companies are also starting to commercialize this technology.

In addition, several manufacturers are experimenting with electrically powered tractors. Some tractors are totally electric, while others are hybrids. Most of them are relatively small with low horsepower, while others are upwards of 400 horsepower.

One major manufacturer is testing an electrically powered tractor with the power provided by extendable/retractable electric power cables.

Smaller autonomous and electrically powered tractors may provide an interesting source of horsepower

for farmers. More than one tractor could operate simultaneously in the same field doing separate tasks.

Will electric tractors become a trend? My crystal ball is somewhat hazy but nothing is impossible in this day and age.

Did we foresee autonomous tractors, combines and grain buggies 20 years ago? I did not and I doubt if many of you did either.

Conclusions

Battery technology has increased significantly in the last decade.

For instance, did any of us predict the use of button batteries in vehicle key fobs? Locking and unlocking vehicle doors and trunks is a very convenient feature when you're carrying groceries or other items.

When I was a very young lad, I remember seeing my mother crank start the family Ford Model A car. Reportedly, women were the primary supporters of early electric cars and I can understand why.

As we listen to automobile ads, the new capabilities offered for maintaining speed as well as automatically maintaining the distance behind or beside another vehicle is almost unbelievable.

Many of us appreciate the benefit

of speed control on the highway. This feature does two things.

First, it can control the vehicle speed to help prevent you from getting a speeding ticket. But, just as importantly, this feature prevents the right leg from cramping when you want to maintain a constant cruising speed on the highway.

By the way, when was the last time you used a road map? The accuracy of mapping and route selection in GPS systems is incredible.

I remember the first GPS unit I acquired for my combine to permit the drawing of yield maps. It had to "see" a land-based beacon in the United States to provide accurate locations.

If the combine went too close to tree lines, the signal on the unit became scrambled.

My wife's small sports car stops the engine when you hit the brake and restarts when you press the accelerator. This feature saves gas and decreases air pollution. Did we visualize that technology even ten years ago?

I predict electric cars and tractors will be very popular for many tasks by 2030. **BF**

Ralph Winfield is a retired professional engineer, farmer and technical writer.



ARTIFICIAL INTELLIGENCE COULD IMPROVE YIELD PREDICTIONS

Farmers may soon be able to make even more accurate management decisions and crop yield predictions, thanks to American researchers.

A team of scientists are using artificial intelligence to generate yield predictions and to learn about factors that cause differences in yield response to inputs across a field, said a February release from the **University of Illinois**.

In the study, researchers used a type



of artificial intelligence, called convolutional neural network (CNN), to analyze field data, the release said.

Some methods of conventional machine learning start with patterns and the computer puts data into those existing patterns. But CNN does not rely on existing patterns.

Instead, the technology takes pieces of data and learns the patterns that

organize them, the release said. This approach is like how humans organize new information in their brains.

“Eventually, we could use (CNN) to come up with optimum recommendations for a given combination of inputs and site constraints,” **Nicolas Martin**, an assistant professor in the department of crop sciences at the university, said in the release.

The full study is published in the March edition of the journal *Computers and Electronics in Agriculture*. **BF**

MASTERING MASTITIS DIAGNOSIS THROUGH MACHINE LEARNING

New technology could soon help veterinarians improve productivity and welfare on dairy farms in a timelier manner.

This tool could accurately diagnose herd mastitis and find where the pathogens originate, said a March release from United Kingdom’s **University of Nottingham**.

Conventionally, a veterinarian diagnoses herd mastitis by analyzing data from the dairy farm. This process requires time and specialist veterinary training, the release said.

However, researchers are creating an automated machine learning tool to identify the cause of herd mastitis.

The machine algorithms achieved a classification accuracy of 98 per cent for environmental versus contagious mastitis and 78 per cent accuracy for lactation versus dry period environmental mastitis, the release said.

“A diagnostic tool of this kind has great potential in the industry to



tackle this condition and to assist veterinary clinicians in making a rapid diagnosis of mastitis origin at (the) herd level in order to

promptly implement control measures,” **Dr. Robert Hyde**, a veterinarian and researcher from the school of veterinary medicine and science at the university, said in the release.

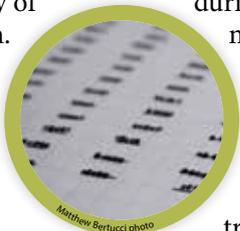
The full study is published in the March edition of the journal *Scientific Reports*. **BF**

NEW TOOL CONTRIBUTES TO WEED CONTROL RESEARCH

A newly proven tool could help improve the ease and accuracy of weed management research.

A team of U.S. scientists developed an automated weed seed counter, which could provide relief for researchers and students who must count seeds, a February **American Society of Agronomy** release said.

Instead of counting seeds by hand



and lining them up on graph paper during a study, researchers could now “count” on the scientific accuracy of a computerized particle analyzer, the release said. This table-top piece of equipment uses a light and a camera to count seeds as they travel along a conveyor belt.

Researchers can manually count and check between 2,000 and 2,500 seeds in 30 minutes. The automated

method can compile the same data in about 14 seconds, the release said.

“We found ... that the computerized method can offer a more rapid alternative if available,” **Matthew Bertucci**, a research scientist in the crop, soil and environmental sciences department at the **University of Arkansas**, said in the release.

The study is published in the February online issue of *Agricultural & Environmental Letters*. **BF**

AG HELPS MAKE ECO-FRIENDLY LAUNDRY DETERGENT

As a result of recent developments, agricultural waste could soon be a source for a key ingredient in laundry detergent.

Using mustard seed oil cakes, researchers hope to create an economical and naturally derived version of lipase, said a February release from England’s **University of Portsmouth**.

Manufacturers use lipase, which is an enzyme, in detergents because it is eco-friendly and effectively removes

oil stains from clothing, the release said. It is expensive for companies to biotechnologically produce this enzyme, but lipase produced from mustard seed oil cakes offers a more financially viable alternative. The oil cakes provide an effective growth medium for microbes to produce enzymes, the release said.



“*Anoxybacillus sp.* ARS-1 (a type of bacteria) produced lipase (that) was found to be stable and resist almost all chemical detergents as well as common laundry detergent,” **Dr. Pattanathu Rahman**, a microbial biotechnologist from the Centre for Enzyme Innovation at the university, said in the release.

The study is published in the February edition of the journal *Preparative Biochemistry & Biotechnology*. **BF**

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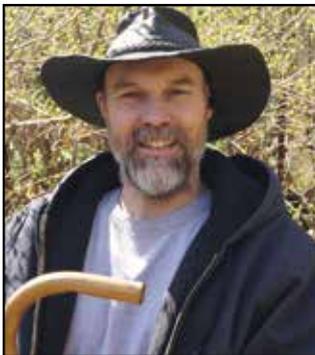


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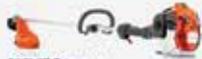
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SMOOTH DRUM LAND ROLLERS

VS MODEL

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- 2 wheel design (8 bolt 14 ply 12.5L 16)
- 30 diameter rollers 3/8" thick
- 2" main bearings



X FOLD

- 30' - 47'
- 30" diameter drum
- 3/8 & 7/16 wall
- 2" HD ductile bearings



3 OTHER MODELS AVAILABLE
- UP TO 65'

CRIMPER ROLLERS

Smyth "CRV" series land rollers are similar to our "VS" series. Benefits of the crimp roller include:

- Cover crop management
- Ideal for organic farming
- Reduces the use of herbicides
- Prevents soil erosion
- Reduces water evaporation from soil
- Saves time

Specs:

- Cat II 3 point hitch
- 12 blades per drum (7-3/4" spacing)
- 1/4" thick blades
- 30" diameter crimp rollers
- Replaceable 1/4" blades



Each section of the 12' Main is made up of (2) 6' pieces to form a chevron shape for easy rolling.

CRS MODEL (Shown)



X-FOLD (CRX MODEL) AND CRS CAT II 3 POINT HITCH MODELS ALSO AVAILABLE

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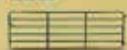
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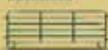
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	13534	JOHN DEERE	6430	2012	9,500 HRS, 100 PTO HP, 4WD, PREMIUM, 24 SPD, JD SELF LEVEL LOADER	\$ 54,900
	13567	CASE IH	MAXXUM 140	2011	4,600 HRS, 120 PTO HP, 4WD, 16X16 TRANS., 750 LDR, FRONT HITCH & PTO	\$ 69,900
	12578	CASE IH	MAGNUM 215	2007	5,666 HRS, 180 PTO HP, 4WD, 40K POWERSHIFT, 18.4X46 AXLE DUALS	\$ 84,900
TILLAGE	13107	SUNFLOWER	5035-32	2004	32' CULTIVATOR, 3 BAR COIL TINE, REAR HITCH	\$ 28,900
	13584	SUNFLOWER	5035-32	2007	32' CULTIVATOR, 4 BAR HI-RES HARROW, REAR HITCH	\$ 32,900
	13596	J&M	TF212	2015	20' SOIL CONDITIONER	\$ 12,900
	13506	CASE IH	4500		24' CULTIVATOR, 2 BAR COIL TINE	\$ 3,000
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	13066	SUNFLOWER	6630-27	2013	27' VERTICAL TILLAGE, FRONT BLADES 21", REAR 21.5"	\$ 44,900
	12400	SUNFLOWER	1323-14	2001	14' OFF-SET DISC	\$ 18,900
	13110	SUNFLOWER	1435-33	2011	33' DISC, FRONT BLADES 32", REAR 23"	\$ 44,900
	13548	SUNFLOWER	6631-31	2014	31' VERTICAL TILLAGE, FLAT BAR ROLLER, FRONT BLADES 21", REAR 21.5"	\$ 64,900
	13605	SUNFLOWER	1435-26	2013	26' DISC, REAR HITCH, REAR HYD.	\$ 34,900
	13635	SUNFLOWER	1435-29	2013	29' DISC, NEW BLADES, REAR HITCH	\$ 37,900
	12667	SALFORD	870	2002	28' DISC, ROLLING BASKET	\$ 24,900
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	COMING	CASE IH	R8454	2009	4X6 ROUND BALER, CUTTER, LIQUID & GRAN. APPLICATOR, 12,000 BALES	SCALL
	13595	MASSEY	1363	2013	9' DISC MOWER, STEEL, RAZOR BAR	\$ 17,900



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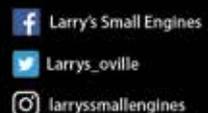


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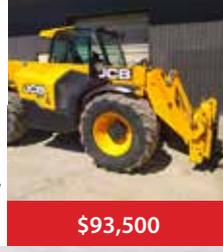
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COLLABORATION DURING COVID-19



Working together in the ag industry is key during these uncertain times.

Our world has changed greatly since early March. Our freedom to go about our normal lives has been restricted since the spread of COVID-19. During the course of the disease outbreak, farmers, suppliers and all those involved in the food value chain have taken pride in providing healthy, safe and nutritious food for Canadians. Our

governments, at all levels, have highlighted the importance of food by designating the entire value chain as an essential service. But there are still many challenges for the agricultural and food industry ahead of us.

Shortly after travel restrictions were imposed on Canadians, measures affecting the travel and integration of foreign workers, particularly seasonal employees who work on Canadian farms, were announced. Furthermore, concerns have been raised over the health and safety of workers involved in food production, particularly those working in close proximity to each other at processing plants. The temporary closure of some facilities in the food value chain has added extra pressure on the ag industry's ability to meet the needs of consumers.

COVID-19 is constantly changing how business is done today and potentially in the future. Collaboration among stakeholders in the food production chain is paramount for our collective short-term future, and also to ensure a sustainable long-term Canadian agri-food sector remains. This collaboration is happening at many levels and will be needed through formal and informal channels.

Collaboration is occurring at government levels where provincial and federal ministers, along with commodity boards, are working to find solutions for bringing in workers from abroad wherever possible. Hiring a local labour force, even on a temporary basis to fill the short-term needs on farms and in the value chain, is critical.

At AgCareers.com we are proud to support our industry by offering free job postings to farms and businesses seeking temporary labour and, as always, it costs nothing for applicants to apply. This offering helps to support the concerted efforts organized by the provincial government to source and help secure a labour force to ensure traditional supply chains can hopefully operate.

In addition to sourcing short-term labour, companies are calling on existing team members to adapt, to step up when possible, to use their skill set to help offset workers who are absent, or to fill in when positions are vacant.

While many are struggling with unemployment during the COVID-19 pandemic, those working in food production are feeling a growing sense of pride in the importance of their jobs. Every position is valuable.

As spring continues with equipment sowing the fields in hopes of plentiful crops, we encourage everyone to be mindful. Be mindful of neighbours and their health, be

mindful of the seed and fertilizer supplier or the truck driver, be mindful of the delivery personnel or equipment dealers. This is the human element of our supply chain. As the spring and summer progresses, we do need to keep in mind that it is likely some individuals near to us may be absent because of illness.

Is there a way to step up and help out? Is there a way to be creative and do something different? Collaborate, help, adapt, think about how maintaining the status quo doesn't quite work in the new 2020.

The lasting effects of COVID-19 on ag are unknown, but for the first time in over half a century, more consumers are valuing food! They appreciate where it comes from, and that it takes many people to ensure its supply. Food remains precious and so do the many ag workers who grow and process it. As many consumers are re-engaging with cooking, perhaps we can re-engage with them to highlight the positives of our industry, the pride we have in our products, and the seriousness with which we take the responsibility of feeding the nation and the world.

To learn more about AgCareers.com free job postings for temporary seasonal workers or to inquire about our findings on the latest hiring trends during the pandemic, visit AgCareers.com/covid19canada or agcareers.com/temporary-jobs.cfm or reach out to us at 877-438-5729. **BF**

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We are happy to introduce a new member to our team ...
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Rachel is a second generation realtor who grew up on a farm just outside London. She has that special "Can-Do Attitude", is approachable and knowledgeable. You will be hearing more from her!

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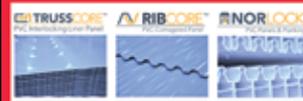
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STANDING TIMBER 5380**STANDING TIMBER** - hardwood and softwoods. Quality workmanship guaranteed. B. Kropf Forestry Service Ltd., Bruce Kropf, RR 1, Shakespeare, ON, N0B 2P0. 519-748-7422.**ALL STANDING TIMBER** - quality selective cutting, free quotes, guaranteed workmanship & payment before harvesting. Joe Lucan, Langton Timber Harvesting. 519-847-5710.**OTHER** 5390**DUTCHMASTER TREE SPADE**, model 360i, 36" ball, was mounted on a 975 Bobcat, exc cond, \$9500. John. 416-458-9289. johnrklecker@gmail.com**SAWMILLS** - Canadian made, quality SMG portable sawmills, many models to choose from, starting at \$4,995 including freight; available at Clark Code Repairs, 905 Sanderson Road; Oxford Mills, ON (613) 258-3829; stop in for a demo.**GRAIN HANDLING / STORAGE****AUGERS / ELEVATORS / CONVEYORS** 5410**LAIDIG BOTTOM UNLOADER**, w/ 5hp motor, \$1000. 519-462-2325.**BELT FEEDER**, 80', w/ 3ph motor, \$500. 519-462-2325.**2-GRAIN AUGERS**, 1- Allied, 40', 1-Westfield, 50'. 519-728-9929.**WESTFIELD 80-41 PTO AUGER**, very good cond, \$1600. 519-494-1028 or 519-644-1028.**CONVEYOR HAY ELEVATOR**, 25', w/ 2hp motor, made of steel, \$250. 519-525-2616.**BUHLER GRAIN AUGER**, 70', 10', \$4500. 519-870-4872.**BRANDT SUPER CHARGE AUGER**, 8', 36'. 705-533-2288.**FARM KING AUGER**, 4'. 705-533-2288.**MARKET AUGER**, 6', 20', hyd driven. 705-533-2288.**WESTFIELD TRANSPORT AUGER**, 41', 7" diameter, PTO, \$1200. 905-263-2060.**SILAGE CONVEYORS**, 60+ feet, 3hp motor, incline. 905-308-1351.**GRAIN AUGERS**, 6', 11'6" to 25'6", w/ hyd & elec motors. Estate sale: long list of trucks, equipment, tools. Stouffville Area. 905-473-3108.**HAY ELEVATOR TRANSPORT FRAME**, w/ wheels, height adjusting winch, \$200. 905-852-7292.**TREE CLEARING, MULCHING & PLANTING** 4160**TRANSPLANTING TREES** - up to 10" trunk diameter w/10,000 lb. root ball. 44", 80", 90" & 100" tree spades. Transplant on your property or we have 100ac. of trees up to 25' tall for sale. OXFORD INSTA-SHADE, Burgessville. 1-800-387-0246. Jan Veldhuizen.**NURSERY/GARDEN****VEGETABLES** 10020**VEGETABLE CULTIVATOR**, S-Tine, 3R, fert attachment, good for organic farmers, \$1500, OBO. 519-791-2163 or (519-326-1262 evenings).**OTHER** 10090

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GREENHOUSES FOR SALE, 2 gutter-connected greenhouses, 42' x 96'; 2 cold-frame greenhouses. Owners Retired, Contact 705-791-2084 or 705-721-1374.**ATTACHMENTS****ATTACHMENTS** 5000**JD #37 LOADER**, complete, hyd bucket, \$500. 613-362-5713.**JD 115 BLADE**, 3pth, 9', heavy duty, \$2000. 705-867-2944.**BACKHOE ATTACHMENT**, 3pth, for a tractor. 519-216-8052 or 519-939-8598.**HD FRONT WHEEL ATTACHMENT**, single arm, for Farmall tractor. 519-294-6441.**LOADER BUCKET**, 6', 33" high, 30" deep, 1/4" thick material; hardened edge on bottom, not quick attach, like new, \$700, OBO. 519-484-2985.**SPRAYERS - 3PT /MOUNTED** 5150**CALSA SPRAYER**, 8R, sprayer for corn, 519-683-4878.**3PTH 125GAL SPRAYER**, 30', w/ brand new pump. Peterborough Area. 705-750-8493.**SPRAYER**, 20', 200 US gallon, converted to hose & nozzle, \$400. 905-894-4959.**SPRAYERS - PULL TYPE** 5160**AGRO TREND SPRAYER**, 800gal, 60' manual boom, \$2800. 519-276-8151.**HARDI 650 TWINSPRAYER**, 60' boom. 519-312-3147.**GEORGE WHITE TANDEM SPRAYER**, 400gal, w/ 45' Hardi boom, w/ triple nozzels. 519-365-5725.**PRECISION SPRAYER**, 500gal, tandem axle, 45' boom. 519-365-5725.**FMC VEGGIE SPRAYER**, 500gal, SS tank, ideal for insecticides & fungicides and frost protection, c/w 6cyl industrial engine. 519-365-5725.**PRECISION SPRAYER**, tandem, pull type, w/ electric controls, 45' boom, \$2500. 613-387-3895.**BLUMHARDT SPRAYER**, 3pth, 300gal, 60' boom, hyd fold & tilt, 3 nozzle outlet, foam marker, hyd pump, JD saddle tanks optional. 905-729-5619.**CALSA SPRAYER**, 30', 1000L, pull type, \$1000. 905-983-9157.**SPRAYERS - SELF PROPELLED** 5170**844 ROGATER SPRAYER**, 90', 6550 eng hrs, 900gal SS tank, auto steer, Envizio Pro controller, \$35000. 519-389-5375.**JD 6500 SPRAYER**, 60' rear fold boom, 20" spacing, heat, air, monitor, row dividers. Call for more info. Aylmer 519-765-2064**OTHER** 5190**HOLDING TANK**, water pump, transfer hoses, for liquid fertilizer, like new, used one season, \$1000. 519-237-3485.**SOLO MIST SPRAYER**, will fog 40' per pass, good for orchards, Christmas trees, nursery trees, or grape vines, heavy duty trailer c/w 50 gal tank, \$595. John. 416-458-9289.**CONSTRUCTION & INDUSTRIAL EQUIPMENT****BACKHOES & LOADERS** 5210**CASE 33 INDUSTRIAL BACKHOE ATTACHMENT**, non extend, for 580 Case Industrial Loader, \$1600. 519-240-1188.**JD 624 H LOADER**, 4WD, sandblasted & painted Nov/19, 16300hrs, good rubber, exc shape, \$44500. Aylmer. 519-765-2064.**2012 NH 84LB LOADER**, off TV6070 tractor, hardly used, nice shape, \$10000. Larry, 705-229-7144.**AC 615 INDUSTRIAL LOADER**, requires some rebuilding/ reassembly, \$2900, OBO. Estate sale: long list of trucks, equipment, tools. Stouffville area. 905-473-3108.**CASE 580 BCK BACKHOE**, loader, motor redone, rearend seals, brakes, hoses, cylinder, strong loader, \$8700, OBO. 905-892-3326.**1 FREE CLASSIFIED**

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866-519-4302**OFA MEMBERS****OTHER** 5290**GEORGE WHITE LOADER**, off Massey 35 tractor, \$350. 519-852-5274.**ARC ELECTRIC WELDER**, complete w/ helmet & cables. 519-294-6441.**BARN/MANLIFT ELEVATOR**, used to move livestock from one level to another, auto controls, spool, gear box, elec motor. 519-348-8170.**NEW HONDA POWER VIBRATOR OR COMPACTOR**, 12"x16". 519-365-5725.

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WESTEEL ROSCO HOPPER BOTTOM BIN, 15 ton. 519-685-2186.

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BRENT 1194 GRAIN CART, 1100BU, Digi star scale, scale head, auger/back camera w/ monitor, 1250/45/32 tires, great tarp, 519-521-1067. joevanquaet-hem@hotmail.com

BRUNS HOPPER WAGON, 160BU, \$500. 519-521-3323.

2-WESTCO CORN BINS, 1-5000BU, 1-9000BU, false floor, aeration fan. 519-868-4570.

STEEL HOPPER BIN, holds approx 34 tonnes, \$1700. Ottawa Area. 613-314-2654 or 613-203-2666.

GRAVITY BOXES, Bruns, Horst & Martin, various sizes. 613-449-4483 or 613-385-2923.

AERATION FLOOR, for a 500BU bin. 905-729-2627.

OTHER 5490

UNVERFERTH 3750 SEED TENDER, 3 axle, scales, low hrs, 1 owner, retirement sale, good cond, \$24500. 519-383-2186 or text.

GFI COMMERCIAL SWEEP AUGER, 36' long, 9 1/2", 7 1/2hp, 600V motor w/ power drive, can be cut to desired length. 519-233-3218 or 519-524-3716.

ROTARY GRAIN CLEANER, \$400. 519-461-0565.

JD BLOWER, 1000rpm. 905-729-2627.

HARVESTING

COMBINES 6010

IH 1440 COMBINE, 6R corn header, 15' flex header, header wagons avail, good cond, \$24000 for all. 613-256-3835.

1998 CIH 2366 COMBINE, 4WD, big top, AFX, 4885 eng hrs, 3650 sep hrs, rock trap, field tracker, annual Stoltz AMI, 1063 cornhead avail, \$55000. 519-216-1641.

1993 JD 9400, 4WD, 3645 sep hrs, 5228 eng hrs, AGLeader yield monitor, exc shape, \$30000. Heads avail, 920 flexhead w/ air reel, 643 cornhead. 519-274-2476.

NI 801 COMBINE, 818 grain body, 815 head, new rubber; NI 708 w/ 717 body & 813 grain head, all mint shape, many spare parts; NI 708 w/ 818 body & 815 head; 4 corn heads, 2 wide & 1 narrow, all are 4R. 519-355-4627.

MF 300 COMBINE, w/ straw chopper, 10' table, pickup reel, \$1300, OBO. 519-736-8976.

JD 9500 COMBINE, 3800hrs, 9510 updates, new 30.5 tires, air reel, chop spreader, fine cut chopper, level land, very clean, \$40000. Pkg w/ heads avail. 519-872-9166.

F2 GLEANER COMBINE, fair/ good shape, \$1000, OBO. 519-941-3902.

2000 JD 9650STS 4WD COMBINE, 2833 eng hrs, 1719 thresher hrs, level land machine, 20.8R42 duals on front, 600/65R28 rear tires, plus JD 930F grain head, field ready. 519-436-1775.

JD 3970 HARVESTER CORN HEADER, 3R, exc cond. 519-529-7765.

MF 850 COMBINE, w/ auto header height control, gear drive, very low hrs, 4 heads avail, always shedded, exc cond, \$9900 (complete pkg negotiable). 519-758-4183.

CORN PICKER, avco new-idea, 2R, \$1000, OBO. 519-768-2898

GEORGE WHITE #6, threshing machine, on rubber, \$500. 519-785-0178.

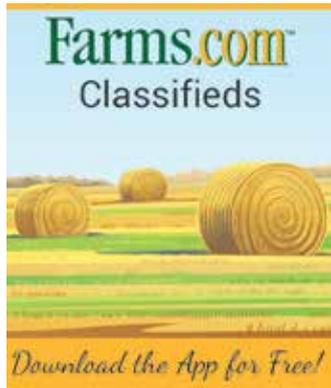
MF 850 COMBINE, hydro drive, corn/soybean special, c/w 20' flex head & 6R corn head. 519-881-8966.

GLEANER L COMBINE, been used every year for 47yrs. Currently used. 519-923-5996.

1993 CASE 1688 COMBINE, 3500 engine hrs, new cone, impeller kit, bushings & bearings redone on the shaker & sieve, new front tires, 1 new rear tire, \$31500, OBO. 519-949-0696.

AC GLEANER COMBINE W/ HEAD, running cond, always stored inside, \$3800, OBO. Call or text 519-995-4153.

1987 GLEANER F3 COMBINE, 13' rigid head, 13' flex head w/ plastic skid plates, on new header cart, 4R corn head, 3 pulleys w/ belts re: cyl spd, std & corn chaffers, full manual set, good cond, well maintained, shedded. Brae-side, ON. 613-622-7865.



HEADERS - CORN 6060

MF 1163 CORN HEAD, 6R, 30", in good cond, \$3000. 519-395-5656.

NEW HOLLAND 722 CORN HEAD, 1R. 226-228-7588.

JD 612 C CORN HEAD, 12x30", knife rolls, contour master header height sensing, hyd adj deck plates, \$49500. 519-437-9247.

1992 JD 843 CORN HEAD, oil bath, w/ new cart, exc shape, \$10000. Don Skipper 519-762-3244.

HEADERS - FLEX 6070

2010 JD 625 FLEX HEAD, c/w new knife & Horst header wagon, low acres, mint cond, \$25000. Eastern Ontario Area. 613-551-2734.

MF 9120 FLEXHEAD, 20', \$2800. 519-276-8151.

2016 JD FLEX HEAD, \$2200. 519-809-4076.

MF 9120, new guards & double cut knife, \$6000. 519-862-2413.

HEADERS - OTHER 6080

NH 960 GRAIN HEAD, 15', 226-228-7588.

WHITE SWATH PICK-UP HEADER, 11', stored inside, \$1200, OBO. 519-240-1188.

MF DIRECT CUT COMBINE HEADER, 15', older header, \$399. 519-758-4183.

MF HEADERS, 15' 1859 & 16' 9000 series, both w/ floating cutterbar & hyd drive U2 reel. 905-875-5857.

AC HEADERS, AC 315 flex head, F3, mint cond, 436 corn head, F3, 436 corn head M or L, 10' pick up header M3 or L3. 905-892-3326.

OTHER 6190

HARVESTING/GRAIN EQUIPMENT, 540 Massey Combine, w/ pickup & flex heads; 20' Lely tine weeder; several gravity bins, grain auger, two Massey #36 grain swathers, one 10' in good cond, one 12' for parts. 519-275-4111.

2005 SPAPPERI TOBACCO HARVESTER, 2R, 4cyl JD eng, 2914 eng hrs, fork type, scales, good working cond, stored inside, \$45000. 226-378-0317.

JD PICK UP REEL, fits 215 grain head, w/ knife drive/wobble box, for 200 series. 519-271-6999.

2 GEAR SHIFT CABLES, for JD 7700 combine. 519-271-6999.

NEW STRAW WALKER, for 1972 Ford combine #642, \$200. 519-375-2008.

HAY & FORAGE

BALE WAGONS / RETRIEVERS 6310

HAY WAGON, 30' x 100", 3" x 2" tubing, at 16" centers, Horst model 265, 14 ton, 6 wheel running gear, 12.5 L X 15F, \$4750. 519-857-3651.

2 MARTIN WOODEN BALE THROWER WAGONS, 20', good cond. Can deliver. Dresden Area. 519-809-4098.

HAY WAGONS/HAY BASKET, 1 - 24'; 2 - 20' exc cond, \$3000ea, Forage King hay basket, good working cond, also various hay equip. 613-874-1194.

2-BALE THROWER WAGONS, for sale. 416-802-6915.

KILLBROS 350, w/ extensions, needs repair, w/ George White wagon, 5 ton, \$895. 519-319-5008.

NEW 23' x 9' FLAT RACK, 12" x 3" runners on used dbl reach wagon, w/ new tires, \$2100. 519-348-8011.

NH 1005 STACKLINER BALE WAGON, holds 56 sm sq bales, \$2500. 519-577-7155.

20' SQ BALE WAGON, steel sides. 519-799-5833.

BALERS - SMALL SQUARE 6320

MF 124 SM SQ BALER, 212 hydraulic thrower, exc shape, always shedded. 519-234-6639.

NH 273 HAYLINER BALER, \$2500. 905-894-4959.

BALERS - LARGE SQUARE 6325

MF 2150 LARGE SQ BALER, field ready, fully overhauled, has baled 60000 bales, new parts, \$70000. 226-343-1853. dseastep@hotmail.ca

2 - 2013 MASSEY 2170 LG SQ BALERS, 3x4, 1 - 6000 bales, \$59500, 1 - 61500 bales, \$57500, both exc shape. 705-229-7144.

DISC MOWERS 6330

NH 469 HAYBINE, used last year, \$2200, OBO. 226-974-0936.

489 HAYBINE, \$2000. 488 haybine, \$1300. Both have been checked over. 519-373-7975.

2006 NH 1432 DISCBINE, used 6 yrs since new, \$15000. 905-768-5329.

FORAGE BLOWERS /BOXES 6340

CASE 600 FORAGE BLOWER, very good cond. 519-698-2096.

NI 901 FORAGE WAGON, on 12 ton horse gear, always shedded. 519-685-2186.

KOOLS FORAGE BLOWER, 56', exc cond. 519-276-8995.

FORAGE BLOWER, 60" high x 8" wide, manufactured by Dion, \$500. 519-364-2099.

OLDER DION FORAGE WAGON, good working order, has a roof. 519-449-2286.

MOWER CONDITIONERS /WINDROWERS 6350

NEW IDEA 272 CUT CONDITIONER, field ready, 613-473-4131.

JD 1209 HAYBINE, for parts, needs some repair. 226-228-7588.

NH 492 HAY MOWER, 9 1/2' cut, \$7500. 519-227-1113.

RAKES/TEDDERS 6355

STOLL ROTARY RAKE, 11', putt type, \$1250. 519 871 0167.

STOLL R3354 DS ROTARY HAY RAKE, \$1700. 519-227-1113.

NH 56 SIDE RAKE, no missing pieces, good working cond, \$1200, OBO. 519-462-2928.

NH 256 ROW BAR RAKE, \$2500. 613-387-3895.

KRONE 810 HAY RAKE, tandem rotor, will make 2 single rows or 1 dbl row. 905-380-1065.

NH 254 TEDDER RAKE, \$4500. 905-983-9157.

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TIRES, DUALS, RIMS & CHAINS 6740

SET OF SNAP ON DUALS, 30", w/ like new Goodyear tires, \$1200. Goderich Area. 519-524-1284.

TIRES, 1 deep lug; 750/17, 8ply, tire tube on rim, 1 front rib tractor tire & tube c/w wheel 400/18, 4ply, good, 2-A78 13 tires snow on 4 bolt rims; fair. 519-294-6564.

SET OF DUALS, 18.4 x 34, w/ hardware. 519-368-2407.

OTHER 6790

SNAP-ON VALVE REFACTOR, model #4162 serial #VR 200BM. 519-294-6441.

NEW! AEROQUIP HYD HOSE, 5/8", SAE 100, approx 100'; \$200. 519-484-2633.

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PLANTING & SEEDING**DRILLS & CADDIES** 6820

IH 5100 SOYBEAN DRILL, 21 run, grass seed, dual disc, packing wheels, stored inside. 226-931-7557.

5300 IH SEEDDRILL, 21 run, hyd markers, always shedded. 519-828-3443.

IH 10 SEEDDRILL, w/ man lift, grass seed box, for parts. 613-256-3067 or 613-807-3153.

JD 515 NO-TILL DRILL, on yetter coulters cart, has seed agitator, press wheels, plus finger harrow, \$10000. 613-525-0015.

MF 33 GRAIN DRILL, w/ packer, manual dble lift, grain only, \$1200. 905-442-1105.

IH 510 SEED DRILL, 18 run, dry fert, cult under tongue, hyd cyl, \$1800. 705-434-1691.

JD 1590 NO TILL DRILL, scales, auger & markers, liq fert, 2pth hook-up, low acres, \$55000. 519-291-0106.

JD 750 NO TILL DRILL, 15', 11" spacing, 2pth, monitor, scales, liquid squeeze pump, markers, field ready, \$14500 firm. Fingal, Jim 519-769-2777, notiller402@gmail.com

PLANTERS 6830

JD CORN PLANTER, 4R, w/ monitor, stored inside. 519-463-5296.

JD 1750 VACUUM PLANTER, 6R narrow, dry fert, monitor, fert auger, insecticide boxes, road lights, planter like new, \$35000. 519-695-6613.

CIH 955 CORN & SOYBEAN PLANTER, 6/11, w/ dry & liquid fertilizer, exc cond, \$12000. 705-341-7720.

INT 400 CYCLO, 6R, 30", dry fert, hyd drive, monitor, good cond & 4R 400 Cyclo for parts, \$1000 for both. 519-392-8123.

JD 1790 CORN/SOY PLANTER, 16/32R, central fill, factory liq fert, new 25 wave coulters, 1 season, \$98500. 519-437-9247.

IH 800 CORN PLANTER, new opener discs, corn & bean drums, dawn trash whippers, 540 pump. 519-446-1169.

FOLDING TYE SERIES V DRILL, 30', 52 run, double disc openers & markers, min till, good cond. 519-529-7850.

TILLAGE**DISCS** 7010

KRAUSE WING DISC, 22', hyd fold. 519-379-6447.

2016 KUHN KRAUSE 8000 EXCELERATOR, 20', very good cond. 519-355-6292

JD 220 DISC, 20', in good cond, \$4295. 519-319-5008.

10' COCKSHUTT WHEELED DISC, good cond, \$1500. 519-375-2008.

FIELD CULTIVATORS 7020

SALFORD 500 CULTIVATOR, 28', S-Tine, w/ buster bar, single roller basket. 519-443-5481.

WIL-RICH QUAD X, 32', floating tongue, HD dble springs, 5 bar spike harrows, exc teeth, rear hitch and hyd, meticulously maintained, always shedded, fed lots of grease, \$31500. Goderich Area. 519-955-3475.

AC CULTIVATOR, 22', w/ wings, 3 cyl, new teeth, good cond, \$1700. 705-292-7859.

NOBLE CULTIVATOR, 6R, w/ rolling baskets, \$495. 519-319-5008.

MCKEE HIGH S-TINE CULTIVATOR, 16', hyd fold wings, dble rolling harrows. 519-365-5725.

MULCH FINISHERS 7030

JD 950 CULTI-MULCHER, 15', Ducktile front, 29 teeth/tines, Crowfoot packers on rear, \$4200. 519-367-2539.

KILLBROS CRUMBLER, 37', dual wheels, lights. 519-765-2064.

PLOWS/RIPPERS 7040

OVERUM CXL 7 FURROW ROLLOVER PLOW, very good condition, well maintained. 519-274-4180.

KVERNELAND BB 115 PLOW, 6 furrow, vari-width, original mould boards, #9 bottoms, mint cond. \$20500. 519-636-6750.

LANDALL (KONGSKILDE) SOIL SAVE, 11 shank, spring rips, \$3900, OBO. 519-769-2613 or 519-671-8670.

TRIPLE-OK PLOW, 5 furrow, adjustable, auto reset, exc coulters, \$1500. New Hamburg Area. 226-747-5533.

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OTHER 7090

MAY-BRIDGE HARROW, 14', w/ bars front & back, straight. 613-835-2780.

FLEURY BISSELL PACKER, double roll, 10', good cond, \$300. 905-939-2976.

R&R LAND ROLLER, 39', hyd fold, w/ hyd track eliminator, \$15500, OBO. 519-881-8669.

SCHULTE STONE PICKER, ground drive. 519-200-2167.

LAND PACKER, 14', w/ 2 pups; 4' each, works well, \$700. 519-237-3485.

2016 HOULE SWD15M ROCK RAKE, like new, \$15000. 519-272-5208.

4 ROW ALLIED SCUFFLER, good shape, w/ rolling shields, \$700, OBO. Stratford. 519-273-1892.

6 SECTION DIAMOND HARROW, good cond. 519-799-5701.

JD 200 SEEDBED FINISHER, 45'. 519-462-2163.

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TRACTORS**4WD** 8100

JD 5083 E LIMITED, 4WD, cab, heater, air, 80hp, plow speed, trans high & low, hyd reverse. 519-401-4304.

1994 JD 4960, 7676hrs, eng & trans rebuilt at 5000hrs, 46" rubber, \$75000. 519-272-5208.

FORD 7740 TRACTOR, cab, w/ ac, 4WD, 7255 hrs, good cond, asking \$19500. Stratford Area. 519-625-8941.

CASE 2470 DIESEL TRACTOR, Traction King, exc cond, \$16500. Call or text 519-995-4153.

LOADER TRACTORS 8200

JD LOADER, #E 0052, all cyl, 2 way industrial 80" bucket. 519-294-6564.

IH 656 TRACTOR, w/ NI loader, good cond, \$3900. 226-627-0074.

2006 MAHINDRA 7010, 80hp, 4x4, diesel, w/ cab, air, PS, loader, 1600hrs, \$24900, OBO. 519-820-8184.

2005 NH TM120, air, heat, 4 remotes, self leveling loader, w/ power quick attach buckets, runs good, 9350 hrs, \$29000. Lucknow HD dble auger snow-blower avail. 705-718-0777.

OTHER 8490

JD 7520 ARTICULATING TRACTOR, 4000hrs, rebuilt motor; 3500hrs, all new radial tires, JD 1000 Series Cultivator, 33.5' w/ sprayer tank, boom, harrows, narrow teeth, new wide teeth, not installed, JD 3200 Plow, tandem hitch, 8 furrow, 18" Field Ready! Selling all together, \$35000, OBO. 519-275-4788.

1978 INT 140, w/ cultivators & side dresser, 60" woods mower, exc cond, \$5800. 519-384-1835.

KUBOTA TRACTOR HOOD, model M9000, \$450. Peterborough Area. 705-944-5739.

FORD 3000 & 4000 TRACTORS, diesel. 905-714-9690.



by
**JOE
CALLAHAN**

THE 'DEVILISH' HISTORY OF SYRUP PRODUCTION

These Prince Edward County producers help consumers tap into the roots of the maple syrup sector.

For anyone who has childhood memories of traipsing through deep, wet snow late in the winter or early in the spring to collect sap from sugar maple trees, a visit to Hubbs Sugarbush and Sweetwater Cabin is likely to trigger a strong reaction.

Ron and Janice Hubbs of Prince Edward County produce and sell maple syrup and related products from their over 100-year-old maple sugar bush. The couple have created an exhibit of antique maple syrup production tools and equipment in their Sweetwater Cabin. They salvaged the building from Lanark County and moved it to their farm in 1998.

The Hubbs' interest in the history of all things maple syrup and maple sugar was spawned by conversations with a neighbour. In the 1960s, Odie Grimm, a descendant of the founder of the G.H. Grimm Manufacturing Co., retired and became their neighbour on Rednersville Road in Carry- ing Place.

Odie sold maple sugar production equipment manufactured by the



Ron and Janice Hubbs

company. The G.H. Grimm Manufacturing Co. was one of the largest and most influential evaporator companies of the 19th and 20th centuries, reports Matthew Thomas on the website maplesyruphistory.com.

The Hubbs have an 1881 model of a Grimm evaporator, built to scale, so that he could explain the unique value of his evaporator. The model is one of hundreds of antique production tools and equipment that the Hubbs have on display in their cabin.

People used the sugar devil, pictured to the left, from about 1850 to 1915, Ron says. People used this tool "to break up solid maple sugar in a sugar barrel into smaller pieces that could be used for cooking," reports an OMAFRA publication titled "A guide to improving and maintaining sugar bush health and productivity."

The sugar devil "actually had two purposes. One was to grind sugar and the other was to loosen up dates in a barrel," says Ron.

People would preserve fruit in barrels of sugar at the time.

Other interesting items in the Hubbs' display include sugar nippers and shavers. People used these tools to cut or break off smaller pieces of maple sugar for use in foods like cereal or drinks like tea.

If you visit the Hubbs sap house, you'll find doors from a Small Broth-

ers Lightning model firebox on display, as well as a G.H. Grimm Manufacturing Co. set of doors. The firebox provided heat to boil down sap into sugar. The Hubbs also have a wooden yoke, which people used to transport buckets of sap in the woods.

The extent of the couple's collection isn't surprising, given Canada's long history of maple syrup and sugar production. Many accounts attribute the discovery of maple syrup production to Canada's Indigenous peoples.

Today, Canada produces roughly 71 per cent of the world's supply of maple syrup, Agriculture and Agri-Food Canada says in a "Statistical overview of the Canadian maple industry, 2018."

And the Hubbs are certainly doing their part to preserve that history and contribute to the industry's continued success. For over 40 years, the pair have hosted pancake breakfasts on their farm. Ron and Janice were inducted into the Quinte Maple Hall of Fame in 2009 for their work in maple syrup production and for their creation of a permanent display of antique tools from the sector. **BF**

If you'd like to share the story of an old farm tool or implement from your family, reach out to Andrea Gal, Better Farming's managing editor, by email at andrea.gal@farms.com.



Between the mid-19th and early 20th centuries, families used the sugar devil to break up maple sugar stored in barrels.

ARBOR DAY BLOSSOMED ACROSS THE PROVINCE

by BARRY MARSHALL

In May 1885, Ontario schoolchildren rejoiced when the province introduced a holiday to spark their interest in the natural world.

Arbor Day began as a provincial beautification holiday, a day when schoolchildren would help landscape and beautify their schools.

Among their tasks, children levelled the ground, made pathways and planted flowers or trees, a May 1885 article in the newspaper *The Rural Canadian* said.

George Ross, the minister of education, believed that if schoolchildren helped beautify their schoolyards, they would respect property, the article said. The activities would help children become invested in their schools and communities.

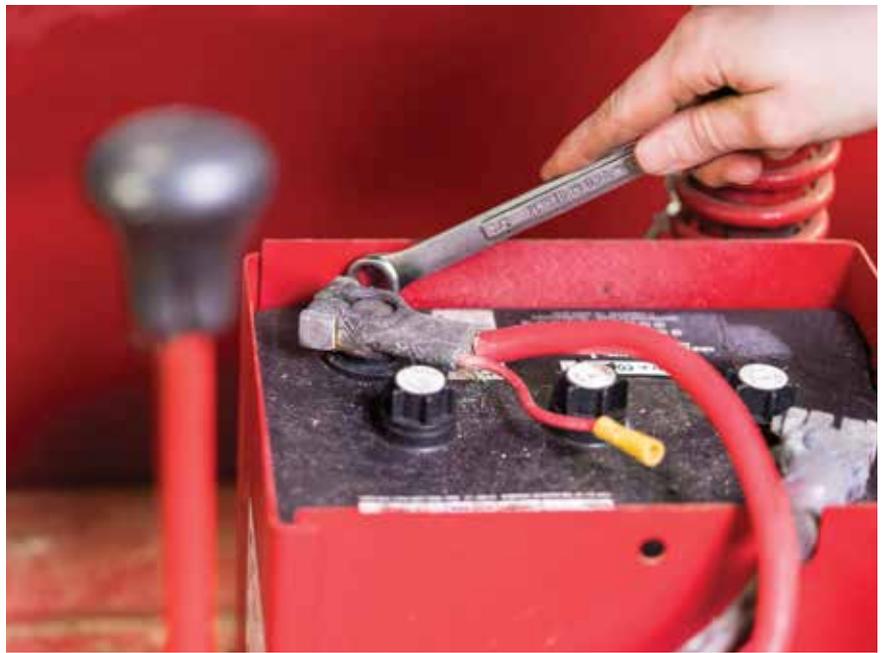
Provincial leaders hoped, too, that the beautification projects would instill community pride in young people and help keep them on the farm at a time when city lights beckoned.

Today, Arbor Day is still celebrated in many countries. Now, it's a day for children and adults alike to invest in their community spaces.

In Ontario, the event has expanded into Arbor Week.

In today's world of environmental consciousness, Arbor Week reminds us that it is important to care for our green spaces because they care for us. **BF**

Jecapix/iStock/Getty Images Plus photo



IN THE SHOP WITH RACHEL CONSIDER AN 8-VOLT BATTERY FOR YOUR ANTIQUE TRACTOR

by RACHEL GINGELL



Is your antique tractor getting tired? A tractor that's cranking slowly and generally worn-out is probably a great candidate for a 12-volt (12-V) upgrade (or a complete engine overhaul).

But, before you jump to that expensive and time-consuming step, try this quick trick: plug an 8-V battery into the 6-V system.

An 8-V battery has enough extra power to make your starter spin a little faster, giving a tired tractor just enough of a boost to start quickly. Tractors from the '40s and '50s that have cut-out systems are ideal candidates for this quick fix. Examples include the Farmall Cub, A, B, C or H, the Ford N-series, the Case SC, and the John Deere Model A and B.

Compared to a complete 12-volt conversion, making the switch to an 8-V battery is a breeze.

In most cases, the rest of the electrical system can remain in place. You don't need to swap out the generator (or alternator), voltage cut-out (or regulator), or

coil. Typically, even the headlights and lightbulbs are compatible.

Most major brands offer 8-V batteries, and they are easy to order if your local store doesn't have one on the shelf.

Upgrading the battery isn't a cure-all, though. If the tractor's charging system isn't working at all, a stronger battery won't fix it. You'll need to track down the problem and replace the relevant parts.

For help with this process, you can watch my online tutorial at FarmTractorRepair.com/CubCharging which reviews four common troubleshooting steps.

If your tractor is cranking slowly and is generally worn out, an upgraded battery is a "band-aid" for a larger problem. However, if you need to get a few more years out of your tractor before you're ready for a complete overhaul, an 8-V battery might be just the ticket. **BF**

Rachel Gingell works alongside her father, repairing and re-selling tractors.

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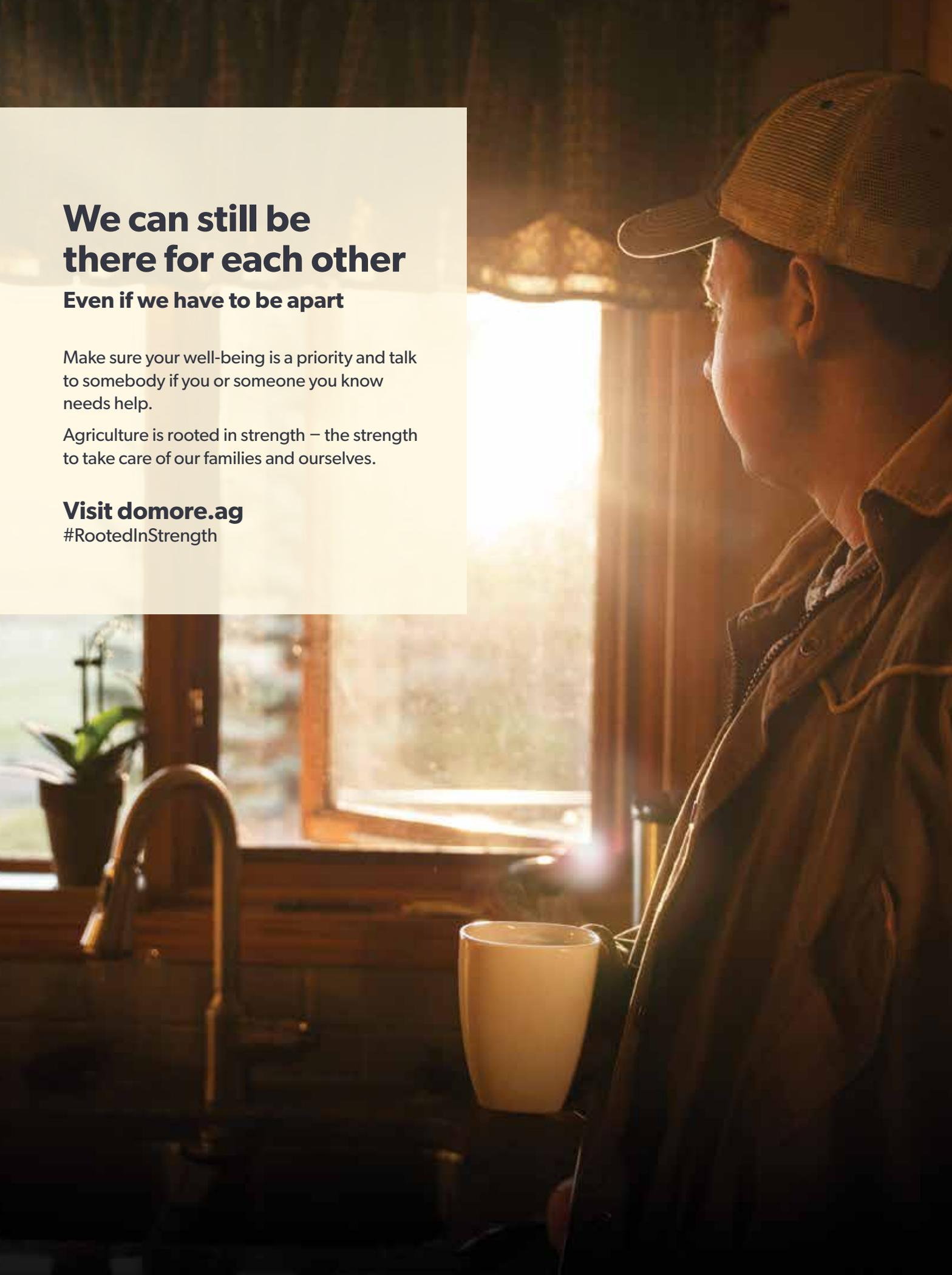
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A man wearing a tan baseball cap and a dark jacket is shown in profile, looking out a window. The scene is warmly lit by sunlight coming through the window. In the foreground, a white mug of coffee sits on a dark surface, likely a kitchen counter. A brass faucet is visible to the left of the mug. The background shows a blurred view of a landscape through the window.

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