

# CountryGuide

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WESTERN EDITION / COUNTRY-GUIDE.CA  
JULY/AUGUST 2017

What are your  
farm succession plans?  
Prepare for the future  
of your farm.

Tips & Strategies Inside



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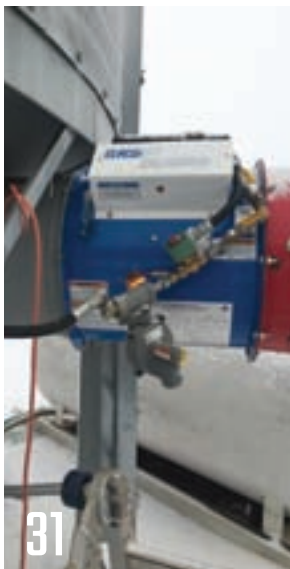
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### Deere looks to 2018

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## What's up in Cartwright

Five years ago, *Country Guide* discovered a cluster of starry-eyed young farmers struggling to start small farms in the heart of Manitoba's big-farm country. This month we go back to Cartwright, and this time we discover that all the hopes that those young farmers had pinned on holistic agriculture and direct marketing have actually paid off, with only a modest amount of tinkering along the way. Here are their stories.

# Get in with the right questions



**If you want to know who is going to be farming five years from now, then taking a look at who is in the aisles at Ag in Motion and at Canada's Outdoor Farm Show is a good place to start.**

Business schools teach a useful rule. Whether you're CEO of Ford or if you run a Mom and Pop restaurant, they say, you should spend 80 per cent of your time working on the nuts and bolts of how you make the right quality product at the right price.

That seems about right for the farm too.

One of the predictions we can pretty safely make based on the 2016 ag census is that cost management is going to be an even more important success factor in the next five years.

In many ways, the playing field is more level than it was just a couple of years ago. Key strategies are being exploited by a larger and larger share of our farms. More farms, for instance, are incorporated. More are getting professional accounting and financial advice, and more have sufficient reserves to avoid being pushed into decisions they don't want to make.

Today's farms also share the same hurdles, including the high cost of expansion, and their return on assets is an obvious target for differentiating their performance.

But it isn't the only way.

When you're at the farm shows, tell the company people you meet that you want to learn more about their company, not just about their product and how they service it.

What makes them so sure, for instance, that they've got the right attitude, the right skills and the right strategy to succeed.

In other words, turn the tables on the companies, because those are exactly the questions that they are asking about you.

Every company worth its salt is assessing the farmers in its geography on a more or less continuous basis. They know the customers they want to protect, the farms that don't really matter, and the farms they desperately want to acquire.

Increasingly, they aren't defining those categories based solely on current acreage or equipment line-up. Instead, they're making deep decisions about whether you're likely to be a winner.

It's a test they know they must win. Competition among farm supply businesses is intense already, and is about to become a blood sport.

Of course they want to know if you're on top of the 80 per cent, i.e. the production side of your business. But increasingly, they're looking to see if you respect the other 20 per cent too, since it will disproportionately affect your long-term outlook.

Are you organizing family meetings? Do you have defined roles for family members? Are you smart about HR? Do you have vision? And can you articulate it?

And, most important of all, do you enjoy talking business strategy?

If you start asking your own questions when you size up suppliers, you'll be impressed by the amount of thinking they've done.

And you'll notice that they're noticing that you're asking these questions. So be forward about it.

The more penetrating your questions, the more points you'll earn.

Are we getting it right? Let me know at [tom.button@fbcpublishing.com](mailto:tom.button@fbcpublishing.com).

## CountryGuide

Strategic. Business. Thinking.

1666 Dublin Ave., Winnipeg, MB R3H 0H1  
(204) 944-5765 Fax (204) 944-5562

### EDITORIAL STAFF

**Editor: Tom Button**  
12827 Klondyke Line, Ridgetown, ON N0P 2C0  
[tom.button@fbcpublishing.com](mailto:tom.button@fbcpublishing.com)  
(519) 674-1449 Fax (519) 674-5229

**Senior Business Editor: Maggie Van Camp**  
[mvincamp@fbcpublishing.com](mailto:mvincamp@fbcpublishing.com)  
(905) 866-9991 Fax (905) 986-9991

**Production Editor: John Morris**  
[john.morris@fbcpublishing.com](mailto:john.morris@fbcpublishing.com)

**Field Editor: Lisa Guenther**  
[lisa.guenther@fbcpublishing.com](mailto:lisa.guenther@fbcpublishing.com)

**Field Editor: Shannon VanRaes**  
[shannon.vanraes@fbcpublishing.com](mailto:shannon.vanraes@fbcpublishing.com)

**Online Editor: Greg Berg**  
[country-guide.ca](http://country-guide.ca)

**Design & Layout: Jenelle Jensen**

### ADVERTISING SALES

**Sales Director: Cory Bourdeaud'hui**  
[cory@fbcpublishing.com](mailto:cory@fbcpublishing.com)  
(204) 954-1414 Fax (204) 944-5562

**Kevin Yaworsky**  
[kyaworsky@farmmedia.com](mailto:kyaworsky@farmmedia.com)  
(250) 869-5326

**Lillie Ann Morris**  
[lamorris@xplornet.com](mailto:lamorris@xplornet.com)  
(905) 838-2826

**Advertising Services Co-ordinator:**  
**Arlene Bomback**  
[ads@fbcpublishing.com](mailto:ads@fbcpublishing.com)  
(204) 944-5765 Fax (204) 944-5562

**Glacier FarmMedia President: Bob Willcox**  
[bwillcox@farmmedia.com](mailto:bwillcox@farmmedia.com)

**Publisher: Lynda Tityk**  
[lynda.tityk@fbcpublishing.com](mailto:lynda.tityk@fbcpublishing.com)

**Editorial Director: Laura Rance**  
[laura@fbcpublishing.com](mailto:laura@fbcpublishing.com)

**Production Director: Shawna Gibson**  
[shawna@fbcpublishing.com](mailto:shawna@fbcpublishing.com)

**Circulation Manager: Heather Anderson**  
[heather@fbcpublishing.com](mailto:heather@fbcpublishing.com)

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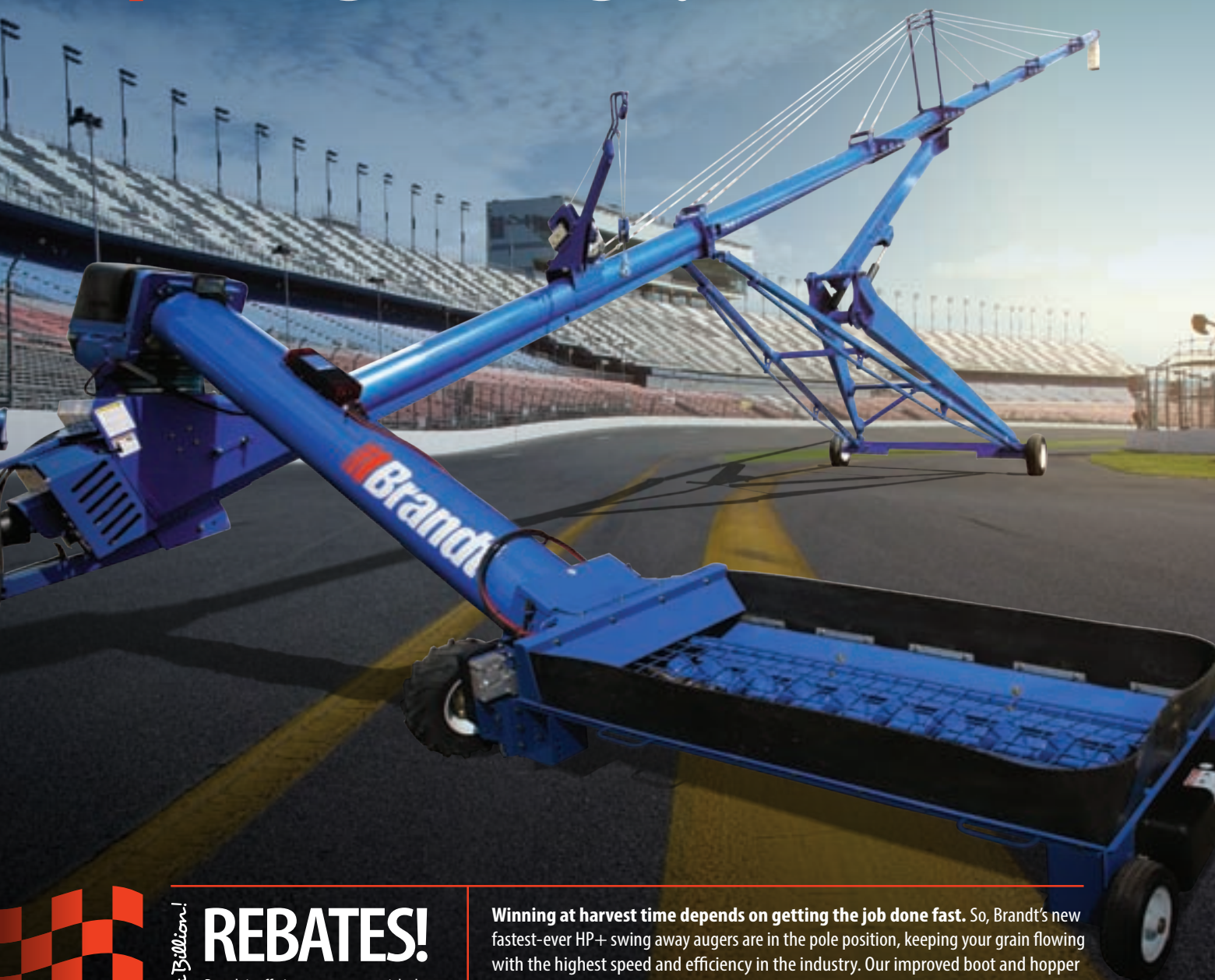
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# **Brandt**



## Deere looks to 2018

New combines figure big in the green brand's plan to get you buying

BY SCOTT GARVEY / CG MACHINERY EDITOR

**S**tretched out across the large grassy lawn in early June in front of John Deere's Harvester Works in Moline, Illinois, was a broad assortment of equipment, with marketing staff showing off to the farm media from Canada and the U.S. what Deere would be adding to its product line for 2018.

Several of the machines on display had already been introduced to the public over the winter, such as the new line of 5R tractors and improvements to the 4 Series sprayers that include carbon fibre booms. However, there was still a significant variety of new equipment releases and updates.

Among them were the digital enhancements to the MaxEmerge 5e and ExactEmerge planters with Seed-Star 4HP, which improves in-cab monitoring through the Gen 4 CommandCenter 4600 display. Multiple bar charts can be viewed simultaneously, and it has a "zoom" feature for detailed row-by-row information. Like much of Deere's latest digital technology, it is customizable and comes with simplified, intuitive screen formats.

The mobile row-unit runoff feature also allows for diagnostic and calibration checks through the use of a mobile device.

To add to the new tillage implements that the brand introduced in mid-winter, Deere's Frontier line will begin offering four new "economical" VT17 vertical tillage implements. These are designed for smaller-acreage farmers, built in working widths from 10 to 15 feet with horsepower requirements in the 85 to 150 range.

Also under the Frontier brand name, Deere debuted its LS11 line of tractor-mounted sprayers. Four three-point hitch mounted models are available with booms from 25 to 40 feet. Once again, Deere marketing reps see this product appealing to smaller producers or those who want smaller equipment to deal with isolated problem areas.

LS11 sprayers come with 250- or 300-gallon (U.S.) product tanks, along with hydraulic or PTO-driven pumps. Single-nozzle bodies are standard on the boom, although the 40-foot version can be ordered with triples.

Without doubt, however, the centrepieces of this launch season are the new S700 Series combines, which explains why Deere decided to hold the event at its Moline Harvester Works facility.

"We have some exciting new innovations in crop har-



**Sprayers:** The LS11 line of three-point hitch sprayers are available with tank capacities of up to 300 U.S. gallons and 40-foot booms.



Speaking to media in Moline, Randy Sergesketter, senior VP, Global Crop Harvesting at John Deere, called the S700 combine line the most exciting innovation in crop harvesting he's seen in his time at Deere.

#### ExactEmerge and MaxEmerge 5e planters get improved digital features.

vesting,” said Randy Sergesketter, senior VP for Global Crop Harvesting. “Over the years I’ve seen a lot of exciting product launches, but I’ve not seen anything as exciting as what we’re bringing for 2018.”

Replacing the S600 Series that debuted in 2012, the four S700 models focus on pushing the technology level higher. That means most of the improvements are hidden within a machine that looks pretty similar to the previous series, with the notable exception of an updated cab.

At the heart of all that “smart” technology is the Combine Advisor system, which encompasses seven separate features.

Some of these technological features are carried over from the S600 with upgrades, but others are completely new.

“The S700 combine performance package is called Combine Advisor,” Sergesketter said. “Our internal tests have shown savings of \$5 to \$15 per acre with the use of Combine Advisor alone.”

The systems within Combine Advisor make it easier for inexperienced operators to make initial settings and monitor combine performance.

The ActiveVision cameras mounted on the clean grain and tailings elevators are

a big part of that. Because they allow the operator to use the in-cab monitor to see real-time grain images, adjustments based on the quality of threshed grain can be made quickly from the cab on the go.

On top of that, the combine’s Auto Maintain function can take over responsibility for keeping the combine settings correct throughout the day. The system can analyse those same ActiveVision images and mate that information with data from several sensors, allowing it to automatically detect the need for setting changes in any of five different threshing systems. It will then make the necessary adjustments on its own.

That keeps the machine working to the same performance level even when field and crop conditions change through the day.

“These (systems) will enable our producers to improve grain quality, reduce losses and improve the quality of harvest data,” Sergesketter said. “(It) will provide small- and coarse-grains producers with an easy-to-set combine that will enable the automation of machine settings, resulting in greater harvesting performance.”

Two new corn headers and the 700D Series of redesigned rigid-frame draper headers are also new for 2018. **CG**

# TAKING CHARGE OF CLIMATE

Changing weather is hitting these B.C. farmers hard. Now they're fighting back

BY MADELEINE BAERG

**S**tanding at the window in his kitchen, Fort Fraser, B.C. rancher Wayne Ray watches the heavy grey clouds and he shakes his head. It's July — haying season — but the rain won't let him get at it.

Ray is lucky. He hasn't yet cut his hay yet, so at least it isn't laying in swaths, rotting with the badly timed precipitation. Yet Ray also knows that every day of waiting means another drop in his forage's protein and quality, and the long range weather forecast shows the rain is going to continue at least a few days more.

Not so long ago, Ray could expect a fine, dry harvest season with lots of opportunity to bale off a top-quality crop. But there's a new normal in this part of British Columbia now.

So if you don't believe in climate change, don't tell it to this rancher, or to any of his equally frustrated neighbours.

Northern B.C.'s Bulkley-Nechako region is well-known for producing much of Western Canada's very best quality hay. The roughly 350-square-kilometre region, from Vanderhoof in the southeast to German-sen Landing in the north to Smithers in the west, boasts summertime daylight that stretches 17 hours. The area surrounding Vanderhoof offers the very best arable agricultural land: an ancient glacial lake-bed with rock free, silty clay loam up to 600 feet deep.

Historically, the region has also provided ideal growing conditions for high-protein, high-sugar forages: heavy snowfall in winter provides great spring moisture, and the reliably warm, sunny summer days were always perfect for both growing and harvesting hay.

In the last 15 years, however, the weather has changed drastically. In the eastern part of the Nechako Valley, it's now significantly wetter than ever before while in Ray's southwestern part of the valley, it's now incredibly dry. There have been more than a few years recently as well when the ground freezes long before the snow flies. Without an insulating layer of snow, the barren ground freezes deep and hard, so that when spring finally comes, melting snow runs off the deep frozen ground rather than percolating in. Streams are often full to bursting, while forage fields go into the growing season dry as dust. And it gets worse. Both spring and summer tend to be cooler now than historical norms, and precipitation seems to wait to fall until the worst possible time; right in the middle of haying season.

"Climate experts predicted we'd get warmer and wetter. That hasn't happened," says Ray. "In recent years, our

summers have been probably five degrees cooler than they were in the previous 30 years. Our winters have been less severe than they used to be but that's actually harder on the plants because we have more fall rain and less snow in winter. Our springs have been cool, dry and windy. And instead of getting rain in April or May when we need it, now we get it in July and August, October and November, even January and February in the form of freezing rain. It's harder to establish crops and it's harder to get good production now."

Rain that falls at haying time, as it does on this grey day, is both an inconvenience and a challenge. Rain that doesn't fall when it is desperately needed is an even bigger problem. Since about 2002, Ray says, his farm has received just 20 to 50 per cent of the total annual rainfall that fell on average each of the previous 30 years. The deep drought of 2010 was so severe that it caused the ground to form a hydrophobic layer, he adds, which compounds the moisture problem.

"Water can lay six inches deep on top of the ground, but if you dig down into the soil four inches, you hit dust. We used to have excessive moisture in the spring but that really made forages grow," he says.

All told, the changes are wreaking havoc on forage production.

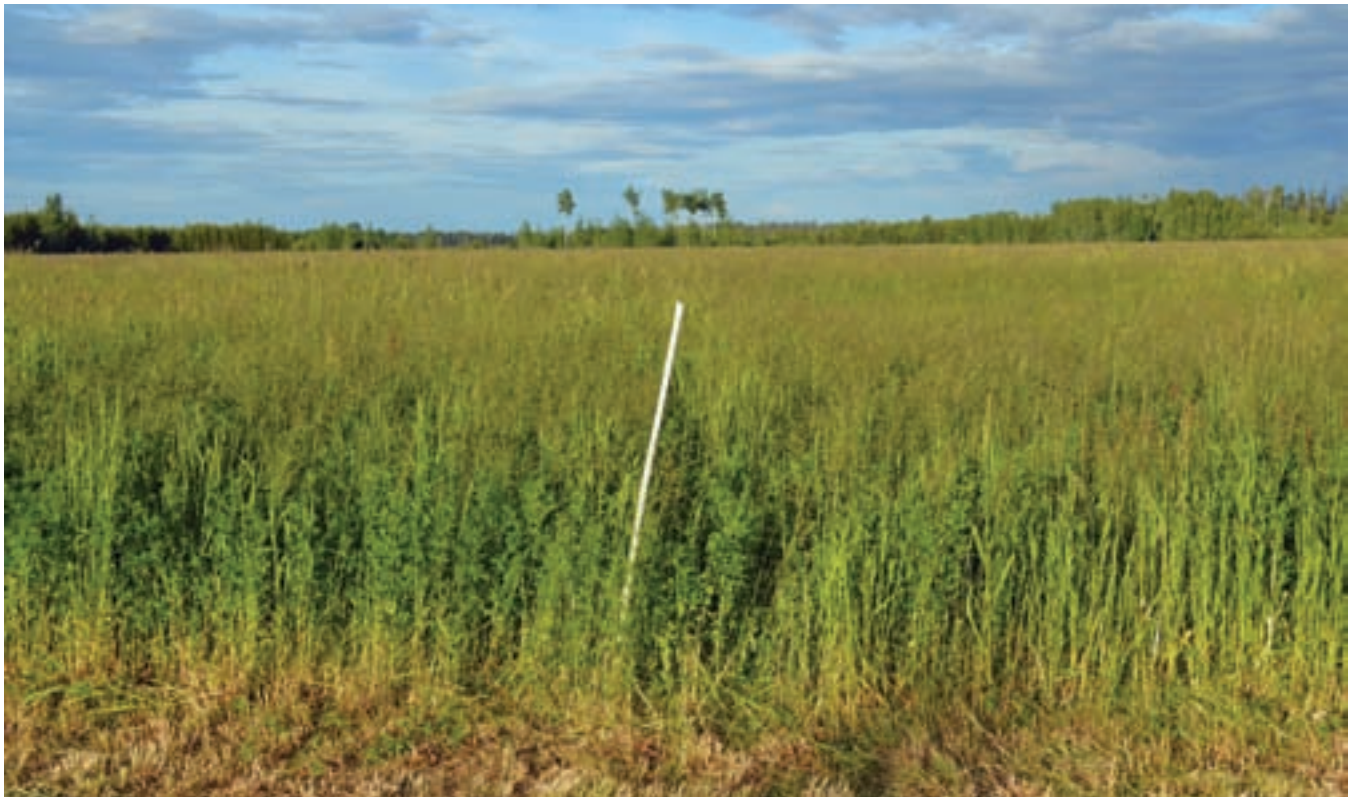
"We used to cut alfalfa between the 10th and the 20th of June and we'd get a second cut in August. Now, we're not cutting until the second week of July or later and it's often too late to get a second cut," he says.

Agricultural researcher and consultant Dr. Catherine Tarasoff agrees, saying weather in the Bulkley-Nechako has changed dramatically.

In Vanderhoof, farmers observed that precipitation patterns became very different than what those farmers were used to. So weather stations were installed in 2014 that appear to validate the farmers' observations: on average, parts of the region are now seeing about half the winter snowpack and twice the rain in summer compared to what they used to. It's a big deal.

"Climate change might not be the focus of every conversation but it's the reason farmers are having discussions about adapting and changing," Tarasoff says. "Farmers know they can't just keep doing what they've always done because it just won't work anymore."

Since there's no way of changing the weather back to the more farmer-friendly patterns of the past, it's farmers who will have to change. Unfortunately, declining government and academic research dollars mean there's little help these days from scientists. Few if any formal



## **“The government dollars we used to see aren’t ever coming back,” says Schweb. That means farmers must do the research**

research trials are taking place in northern B.C.’s unique growing conditions, and scientific support isn’t likely to come from government anytime soon.

“The budget cuts have really left producers in the lurch,” says Sheri Schweb, manager of the B.C. Forage Council (BCFC). “Saskatchewan has 14 forage specialists. B.C. has none. There used to be one agronomist per community, now there’s one — if that — per regional district. And we’ve lost the federal research farms: the one in Smithers closed in the late ’50s; the one in Prince George closed in the late ’90s. The Range Research Station in Kamloops closed in 2013. The only one that’s left in B.C. is the one in Agassiz, but nothing about the growing conditions in Agassiz is similar to growing conditions in northern B.C.”

A 2013 study commissioned by the B.C. Forage Council reinforces this perspective: it found opportunities to expand B.C.’s forage industry but also identified applied research as a major limitation to growth.

While farmers struggle, producer organizations and academic institutions are looking to stretch available dollars.

Despite modest financial resources, the BCFC is stepping up where it can to fill research gaps. Its solution? On-farm, farmer-led research: small scale, simple, practical, scientifically supported trials that attempt to answer individual farmer’s agonomic questions.

“People think research needs to be complicated,” says Tarasoff, who is working with the BCFC to build farmer-led research capacity. “It doesn’t. The foundation of research is taking something you’ve observed and wrapping a question around it. The more specific and concise the question, the more likely you’ll reach a clear answer. And who better to do the on-farm research than farmers? They’re the experts for their land, they know exactly which questions they’d like answered to improve their farm businesses, and they are the most deeply invested in improvement.”

Yet there’s also a downside to farmer-led trials, admits Schweb.

“Part of me wonders if government will say, ‘Well, if you’re doing the research yourselves, we’ll just stay out of it.’ But, the reality is, the government dollars we used to see aren’t ever coming back.”

Wayne Ray was one of the first producers to jump on board with the BCFC’s push to support on-farm research. Over the past two years, he has compared blended forages in hopes they might better withstand his region’s new, more challenging weather reality. And, since he’s heard countless different opinions on optimal seeding rate, he’s also testing whether heavier seeding rates are beneficial or a waste of hard-earned money.

“This kind of research is useful and it’s doable,” Ray says. “It doesn’t take any complicated tools: I’m using a couple dollar-store hoops, a kitchen scale and some zip-lock bags. It probably takes a couple hours at the front end and maybe four or five hours later in the summer. But down the road, if I can gain another 15, 20 per cent production and I’m going to see that gain over 10 years, that’ll be time very well spent.”

**CONTINUED ON PAGE 10**

Six and a half hours south of Vanderhoof, a dozen B.C. agricultural producers meet bright and early on a Sunday morning in a basement conference room at Thompson Rivers University's Student Activity Centre in Kamloops.

The ranchers have travelled to Kamloops — some from close-by, others from the Bulkley-Nechako — for the B.C. Cattlemen Association's two-day conference and annual general meeting. Now, they're investing an extra day in an intensive B.C. Forage Council-hosted workshop that will teach them how to conduct their own on-farm research trials.

Though not scientists — few if any of this particular group have university science degrees — there's no question these producers are experts in their fields (both crop and academic). Their knowledge and experience make them uniquely suited to conduct the on-farm research that they need to make better farming decisions.

Their reasons for being at the workshop vary: Rene, Joyce and Nathan from Telkwa want to extend their grazing season; Greg and Kerry from the mountains above Kamloops are battling wet, alkali soil; John from north of the city wants to improve his forages to allow better rotational grazing. Yet all agree the real reason why they're here: no one else is going to do the research for them, so they better figure out how to do it themselves.

Two or three to a table and shoulder to shoulder with the agricultural scientists who have volunteered to help this day, the producers work determinedly through the B.C. Forage Council's newly published on-farm research guide.

Tarasoff, the workshop's facilitator, repeats one over-arching theme throughout the day: "You can do this. You CAN do this. An on-farm research trial doesn't have to be onerous; the very best questions are small and precise. But the results? The results will be powerful and informative."

Several hours in, Tarasoff calls lunch break. Not a single person heads towards the buffet line. For 10 minutes, 20 minutes, almost half an hour more, the teams of producers and scientists talk intently as lunch waits ignored in the lobby. The producers are serious about this workshop and intent on gleaning every bit of knowledge they can; the scientists recognize the workshop as an opportunity to get farm-applicable science right into farmers' hands.

The B.C. Forage Council is not alone in helping farmers help themselves. The University of Northern B.C. recently began a



Forage growers at Thompson River University learn from scientists how to do their own research. Says producer John Greenall: "These are the kinds of discussions that open up your mind."

two-year pilot project to support on-farm, farmer-led forage research.

"We need to not just make farming sustainable but to expand it," says Serena Black, a new masters in ag science graduate who is working with UNBC on their pilot. "All of the towns up around UNBC identify that logging is going down. All of a sudden, they're recognizing that agriculture needs to be supported, but there are no government dollars to work with."

A big part of building this form of research capacity includes figuring out ways to share the learning says Black. "Farmers are masters of land. Forage days, field days and other opportunities for farmers to actually see trials in action; that has to be a huge priority."

As the BCFC workshop draws to a close, the farmers fold up their farm maps, collect their notes, and ask final advice from the research scientists. As they head up the stairs and out into the bright sunlight, ready for the drive back to their ranches, you can see resolve and — yes — enthusiasm about their upcoming forays into research trials.

Interestingly, the one conversation that hasn't come up all day is frustration towards declining government research dollars, or a feeling of being left high and dry by government. Perhaps this isn't surprising. After all, farmers are used to dealing with lumps and bumps, what "is" rather than what could be. And at least one rancher wonders if farmer-led research isn't the more financially appropriate method of research anyway.

"I'm not opposed to people paying their own way," says John Greenall, a rancher from north of Kamloops. "As a taxpayer, I'm not so sure farmers should expect the government to carry all the weight for research."

He's more than ready to do his part. After the day's workshop, he's itching to get home so he can get started on laying out the seven comparison plots he'll use to determine the best forage varieties for his rotational grazing needs.

"I came here this morning with an idea of what I wanted to find out for my farm. I'm leaving with a plan," says Greenall, who also happens to be president of the Kamloops Stockmen's Association. "The workshop really did clear up how I need to go about doing a trial on my farm. I would have made it much more complicated than it needs to be."

Greenall sees huge value in the day he's just spent designing his research project.

"These are the kind of discussions that open up your mind," says Greenall. "It's like taking a first aid course. Sitting in a room and thinking about first aid for a couple days makes you more aware of safety in every aspect of your work and life, and that's a good thing. Today's workshop is going to help me implement the farm research project that I planned out today, but it's bigger than that."

"This is important stuff because, at the end of the day, you either evolve so you can stay in the game... or you don't." **CG**

# It Takes a Team to Get it Right

**BY BONNEFIELD**

I have a close friend – an avid athlete – who had been having problems with her hip. A lifetime of sports appeared to have finally caught up with her and over-the-counter painkillers wouldn't cut it anymore. So, last year she went to her family doctor who diagnosed her with a degenerative hip and placed her on a waiting list for hip replacement surgery.

While waiting for her surgery, she tried to ease her pain by meeting with a team of specialists for advice: a physiotherapist, an osteopath, a sports medicine specialist, a naturopath and acupuncturist and, eventually, a surgeon who is pioneering a new type of hip surgery.

To her surprise, her team of medical advisors began to doubt the original diagnosis of the family doctor. It turned out that she didn't have degenerative hip disease after all, but rather a pinched nerve and a muscle imbalance that could be treated with daily exercise and specialized physical therapy. After a few months of intensive therapy, she is now pain free and getting back on her bike. Needless to say, she cancelled her date with the surgeon and avoided a painful, potentially life-changing surgery, that wouldn't have helped cure her condition anyway.



The point of this story is that when faced with an important life decision or a complex business decision, it is always best to seek advice from a team of specialized experts rather than from a single generalist.

At Bonnefield, we meet with farmers across Canada every day who are in the midst of making important life and business decisions; decisions about retirement and succession as well as expansion, balance sheets and markets. They have to deal with ever more complicated tax, legal and regulatory issues and figure out how and when to implement new agricultural technology.

Most farmers have someone they turn to for occasional advice: someone just like my friend's family doctor who can be a good sounding board and provide some general advice. But many farm families lack a network of specialist farm advisors that can provide the depth of experience and specific expertise that is appropriate for the increasingly complex business of farming – like the medical team that helped my friend avoid the surgeon's knife.

This is why Bonnefield has been proud to support CAFA since 2013. CAFA, more than any other organization in Canada, is bringing together networks of specialist farm advisors to advance their knowledge, expand their contacts and move towards a team-based approach for helping farmers. Lawyers, accountants, tax advisors, finance experts, realtors, agrologists, marketers, commodity experts – by better understanding each other's perspectives and disciplines, CAFA members can provide a more client-centered, coordinated approach to advising farmers who are making important life decisions and complex business decisions.

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# Census mystery

29,000 mid-career farms have disappeared in just five years. What happened?

BY LISA GUENTHER / CG FIELD EDITOR

**F**or the most part, the 2016 Census of Agriculture was as unsurprising as most farmers might have expected. We already knew that farms are getting larger, and that farmers are getting older.

But the census did reveal something striking — a shocking reduction in the number of mid-career farmers between the ages of 35 and 54.

For some reason(s), Canada lost more than 29,000 of those farmers between 2011 and 2016, a decrease of nearly 23 per cent across the country.

It seems to make no sense. At a time when farm income was smashing every record in the book, a quarter of our mid-career farmers left the industry.

“What’s going on?” asks Glen Snyder, agri-business manager for the Bank of Montreal in southern Saskatchewan. “It was very widely presented in media that a lot of young farmers were coming home... and then we see these stats.”



Was it just because those farmers got older? That’s the usual first guess. In other words, did a big chunk of those mid-career farmers reach their 55th birthdays, so they’re still farming, but now they’re in the 55-plus category?

Apparently not.

While some farmers did turn 55 since the last census, they account for fewer than 6,500 farmers, so they don’t even come close to account for the demographic bleed.

So maybe it’s because demographics are having another impact on this age group, points out Rob Gamble, chief economist with the Grain Farmers of Ontario. The census found a four per cent decline in the 35- to 54-year-old age category for the Canadian population as a whole, he notes, with an 11 per cent drop for the country’s overall 45- to 49-year-old age group.

But still this isn’t enough to explain the farm trend. The answer must lie somewhere else.

## SELL WHEN THE SELLING IS GOOD

The place to look may be cattle. When beef prices recovered a couple of years ago, it was a bit of a double-edged sword for the industry, says Brian Lemon, manager of Manitoba Beef Producers. Many producers actually exited the industry, he says, seeing it as their chance to get out without selling at a complete loss.

It isn’t just Manitoba beef producers who saw peak prices as a chance to cash in their assets. Morwenna Sutter, a real estate agent in northeastern Saskatchewan, says it was also “pretty common” to see beef producers there sell their operations and move on when prices rose.

Sutter grew up on a mixed farm in Alberta, and worked in animal pharmaceuticals, and then the seed business, before moving into ag real estate. She and her

**Strong land prices have led more producers to ask whether now is the right time to leave the industry, says realtor Morwenna Sutter**

husband also run a grain farm. They are in that 35- to 54-year-old demographic of farmers that dipped in the last ag census.

Asked whether those census numbers match what she's seeing on the ground, Sutter says yes and no.

"We are seeing farmers looking to exit the industry," says Sutter, although the numbers of producers selling has slowed in the last two years, she adds.

Sutter says she's also seen some grain farmers in the 35-to-54 demographic selling their farms if they don't have children taking over. They may see their financial risk growing if they continue farming, and ask themselves whether they want to continue farming for the next 30 years without successors.

For farmers with equity and no successors, it's been a good time to cash out. "In the last five years our market has doubled, if not tripled in areas, for land values," says Sutter.

These days, farmers are always calculating the risk and reward when they're making financial decisions, she adds. "We're not farmers anymore. We're ag businessmen."

Factor in the stress and risk of farming — Sutter describes it as "an all-in poker game every year" — plus the realization that there's more to life than farming, and it can make sense that some producers opt to exit early, so they can spend more time with family or focus on other goals.

It's not just western Canadian farmers that have seen rising land values. Gamble says land values have increased in his province over the last five years as well. He suspects that it's very attractive for farmers in that 35-to-54 age group to sell, especially once they enter their 50s.

Although Ontario has several larger, commercial grain farms, the province has a good number of small or part-time farmers, Gamble adds. The next generation is less likely to come back to a 100-acre grain farm, he points out. And like Sutter, he thinks farmers without a successor are more likely to exit the operation.

Still, selling their operations isn't an easy decision for producers, and it might take three years from when a producer first approaches her to the sale, Sutter says. "It's hard for anybody because you put so much sweat into it."

Glen Snyder, ag manager for BMO in Regina, is a veteran in agricultural banking, having worked in the industry since the 1980s. He has done over 800 land valuations so far this year, and he expects to exceed 1,200 by year's end. From what he's seen, land values in about 50 per cent of Saskatchewan's rural municipalities are still increasing slightly. Snyder says that big operators will still pay a premium for land at times.

However, in some parts of Saskatchewan, land values are flattening or decreasing. Snyder estimates that about 20 to 25 per cent of Saskatchewan rural municipalities have seen land values that dropped by five to 10 per cent. Another 30 per cent of municipalities have seen values flatten.

"We saw land values starting to slide after the floods



**“From strictly an industry perspective, having strong, large farms is not a bad thing,” Brian Lemon says, “but we do recognize what this does to rural communities.”**

in certain areas,” says Snyder, such as parts of east-central Saskatchewan.

Sutter says demand for good-quality grainland is as high as ever, but not for marginal grainland. “And that just comes down to productivity of the land.”

Snyder sees more pressure on margins in the near future, but these tighter margins will take time to affect land values, he believes. One of his younger farm clients observed that flattening or dropping land values would ease expansion, a sentiment likely echoed by young farmers across much of Canada.

#### **CONSOLIDATION AND INCORPORATION**

Despite rising land values during the last census period, the grain industry hasn't seen an exodus of producers the way the beef industry did. In fact, there were nearly 2,000 more farms producing grains and oilseeds in 2016 versus 2011.

Snyder says he's seen family farms that have sons and daughters coming home incorporating to ease succession planning. He estimates that up to 60 per cent of Saskatchewan farms with successors coming home incorporated in the census period. Profitable margins between 2011 and 2016 also spurred farms to incorporate for tax reasons, he adds.

**CONTINUED ON PAGE 14**

Sutter has also noticed producers incorporating. Along with smoothing succession planning, incorporation offers a tax advantage for buying land, she says, and revenue earned from that land is taxed at a lower rate if the farm is incorporated.

The latest ag census numbers confirm those observations. The number of family corporations rose to 43,457 in 2016, an increase of over 21 per cent.

The lion's share of Canadian farms are still sole proprietorships — just over 100,000 as of 2016. But the sole proprietorship category has seen a dip of nearly 14,000 farms since 2011.

Unsurprisingly, too, the latest census notes farm size is still growing, while the number of farms is decreasing in Canada. Canada-wide, farm size averaged 820 acres in 2016, up from 779 acres in 2011.

Saskatchewan farms averaged 1,784 acres, making them the largest in the country. Snyder has certainly seen his share of consolidation in Saskatchewan. Interestingly, there was a “huge surge” in Hutterite colony expansion in Saskatchewan, and Western Canada, he says, in the last census period.

“I know my Hutterite telephone book hasn't quite doubled, but it's getting close to that,” he chuckles.

The ag census captures a maximum of three operators per farm, including for Hutterite colonies. That, a call to Stats Canada confirms, has been the practice since 1991.

The limit on the number of farm operators doesn't just affect reporting of Hutterite colonies. Gamble points out large farms could have four or five operators.

“It could be siblings working together with the previous two generations. So there might still be some under-reporting there.”

Even in the beef industry, some of the attrition can be explained by consolidation, Brian Lemon says. As a volume-based business with tight margins, one way for a beef producer to remain profitable is to increase volume.

“From strictly an industry perspective, having strong, large farms is not a bad thing. But we do recognize what that does to rural communities,” says Lemon.

## WEATHER, WEATHER, WEATHER

Lemon thinks he can see additional reasons for the loss of mid-career farms. Lemon took up his post at the Manitoba Beef Producers in the spring of 2016, but

| Farm operators per farm          | Age                           | 2011    | 2016    |
|----------------------------------|-------------------------------|---------|---------|
| Operators on all farms 20        | All ages                      | 293,925 | 271,935 |
|                                  | Under 35 years                | 24,120  | 24,850  |
|                                  | 35 to 54 years                | 127,895 | 98,840  |
|                                  | 55 years and over             | 141,920 | 148,250 |
|                                  | Average age of farm operators | 54      | 55      |
| Farms with one operator          | All ages                      | 122,220 | 113,730 |
|                                  | Under 35 years                | 7,115   | 9,135   |
|                                  | 35 to 54 years                | 49,460  | 38,785  |
|                                  | 55 years and over             | 65,650  | 65,815  |
|                                  | Average age of farm operators | 56      | 56.2    |
| Farms with two or more operators | All ages                      | 171,700 | 158,205 |
|                                  | Under 35 years                | 17,005  | 15,715  |
|                                  | 35 to 54 years                | 78,430  | 60,055  |
|                                  | 55 years and over             | 76,270  | 82,435  |
|                                  | Average age of farm operators | 52.6    | 54      |

| Operating arrangements 22               | 2011    | 2016    |
|---|---------|---------|
| Sole proprietorship                     | 114,006 | 100,061 |
| Partnership without a written agreement | 39,663  | 33,701  |
| Partnership with a written agreement    | 10,672  | 10,536  |
| Family corporation                      | 35,749  | 43,457  |
| Non-family corporation                  | 4,965   | 5,135   |
| Other operating arrangements            | 675     | 602     |

Tables courtesy of Statistics Canada.

before that worked with the Canadian Food Inspection Agency, AAFC, and Canadian Grain Commission.

The hollowing out of the middle-age demographic, he says, confirmed what he'd suspected for a long time. Too many pressures have intensified at the same time.

Manitoba beef producers suffered through “a bit of a perfect storm in the sense that BSE hit, the markets tanked, there was no money in cattle. And then we, in Manitoba, hit a wet cycle.”

“Manitoba is very good at dealing with floods typically, if you wanted to paint with a broad stroke,” says Lemon, who is based in Winnipeg. The Red River usually breaches its banks in the spring, floods cropland, and retreats after six weeks or so, he says.

Manitoba has built infrastructure to mitigate flood damage. Farmers protect their farmyards and are prepared to seed after the flood waters recede, Lemon says.

But much of the pasture and hayland in Manitoba is in low-lying areas.

“When your pasture or alfalfa stand floods, it doesn't come back. And you don't just get to go out in the field and seed it again in the spring after the flood's disappeared,” says Lemon. It can take several years for that land to come back in productivity.

And Manitoba has been dealing with a long stretch of flooding and excess moisture, Lemon points out. Producers expect to deal with an extremely wet or dry year every now and then.

“But when it's seven out of 10 years or eight out of 10 years, that's where it gets to the point where it's unsustainable.”

Lemon says the hardest-hit beef producers were the younger ones who didn't have the equity to ride out those rough years. Many found off-farm work and left the industry.

The 2016 Census reported 36,013 beef operations in Canada in 2016, a drop of over 1,000 from 2011. And there were 4,133 fewer farms producing hay in the latest census. Lemon says the Manitoba Beef Producers stated it represented 7,000 beef producers in its boilerplate statements until the latest census came out. Now they're down to 6,500.

#### THE NEXT BIG CHANCE

When it comes to farmland buyers in north-eastern Saskatchewan, Sutter says she sees a little bit of everything. "We've still got young farmers wanting to move from Alberta to Saskatchewan."

Helping young farmers build their farms is one of the things she likes about ag real estate. But, she notes, she's not seeing as many farms for sale right now, which might be due to tabling land values and less favourable markets.

Sutter says it's hard to say what we'll see in the next ag census. But if farming gets tough again, she expects to see more aging farmers exit.

"Who will pick these farms up if they do? Some will be farmers looking to expand and some will be a new farmer looking to move," she says. Over time, she expects to see fewer producers, mainly due to the risky nature of farming.

Still, despite all the challenges, Sutter remains relatively optimistic about farming. "Good grain land will always be farmed, and good cattle producers will always produce another crop of calves."

Snyder also thinks the number of young people coming back to Saskatchewan farms has flattened recently, mainly due to margins. And both Snyder and Lemon point out that while the percentage of young farmers

**“Incorporation and consolidation are factors too,” says BMO’s Glen Snyder. Over half of farms with children coming home are already incorporated**

grew in the last census, the number was so low to start with that the percentage gain looks more dramatic than it really is.

"It's certainly encouraging to see the young producers bump up a bit. Any upward movement there is promising," Lemon says. But the small increase in young farmers doesn't come close to the absolute number of aging farmers. Plus the producers left in the depleted middle demographic are advancing through the age brackets, he says.

Gamble, who has 35 years of ag industry experience, also expects to see the average age of farmers climb in the next census, partly because it's a trend in the Canadian population. But it's also because of multi-generational farms, he says.

"You've got farm operations that have, in some cases, three generations working in them, and the older operator can slow down and still be involved."

Ultimately, Gamble trusts the evidence of his eyes, and thinks we don't need to be too concerned about the mid-career farmer. Across the industry, he says, 35- to 40-year-olds are stepping into leadership roles, and they are creating their own futures. **CG**

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# Five years on

**I**n 2012, *Country Guide* discovered a cluster of young farmers near out-of-the-way Cartwright, Man. They were all searching for ways to start small in the heart of big-farm Canada, and they all saw their best chance in a combination of direct marketing and holistic practices.

To some readers, it seemed like a dream. To others, more like a fantasy. Five years later, though, these families are still farming, and they're mostly loving it, even if they may have had to jettison some of their loftier ideas along the way.

BY ANGELA LOVELL



PHOTOGRAPHY: SANDY BLACK

## Michelle Schram and Troy Stozek – Fresh Roots Farm

**B**ack in 2012, Michelle Schram and Troy Stozek's biggest goal was to quit their off-farm jobs and farm full time. It's something that Stozek has more or less managed to do, although Schram still works part-time at her parents' ranch supply store.

Schram and Stozek originally established Fresh Roots Farm as a Community Supported Agriculture (CSA) business selling mainly chicken and vegetables to local and Winnipeg customers.

Growing vegetables for the CSA was labour intensive, and they couldn't achieve enough margin to make it feasible to continue marketing that way. So, the biggest change for them has been ditching the CSA and concentrating on direct marketing beef and sheep as well as honey from their apiaries.

"We decided that sheep and cattle were the livestock choices that we wanted to focus, on and honeybees as well," says Stozek. "We've expanded our apiary considerably. It's to the point where it's our main enterprise."

### URBAN DELIVERIES WORTHWHILE

Their network of customers has grown steadily as they have worked hard on marketing and committed to regular urban deliveries. With their customers willing to pay a premium price for their grass-fed beef, lamb and raw honey, it has made the monthly delivery runs worthwhile, especially as they also supply 15 Winnipeg retailers with honey. "We have to restock our stores for honey once a month or so, so we decided it was a good fit for continuing to direct market our meat as well," says Stozek. "We also have an online ordering system where customers can pre-order meat, honey or whatever else they want, and we meet up at a central location in Winnipeg where everybody comes and picks up their orders."

Their farm land base has grown over the past five years. They have bought a quarter section from Schram's parents, and also rent an additional quarter section. With the escalation in land prices over the past few years, the couple had to think carefully before purchasing the quarter, but decided it was feasible partly because of

their plan to concentrate on higher value, pasture-based enterprises and use their holistic management training to maximize the productivity of their land resource.

"We have gotten better at looking at efficiencies and what works for us," says Schram. "We only have so much time and so much labour, so we've focused on how we can best use it to be more profitable and not burn out."

"We decided to focus on honey production because it doesn't have a big land overhead," adds Stozek. "That's been a major part of our cash flow to help pay for the land. It represents shorter-term cash flow where it's not all tied up in bills and overhead."

They have also focused on improving the soil quality on their land, which has already increased the carrying capacity of their land by about five additional head of cattle per year. "It's about regenerating organic matter, bringing back the soil microbiology that makes a healthy soil, and all of the things that come from a healthy soil," says Schram.

"We've focused on increasing productivity with our cattle and sheep through things like higher stock density, adaptive grazing, and different ways to overwinter our livestock on the hay field, which means we are using every opportunity to maintain nutrients on the land. That's giving us more grass, increasing capacity, and allowing us to have more animals that will help provide more profit in our business."

#### **MAKING THE MOST OF WHAT THEY HAVE**

Currently, Schram and Stozek sell about half their cattle to the conventional beef market, and half as direct-marketed, grass-fed beef. With the demand for grass-fed beef constantly growing, they plan to switch to that market completely in the future, so are working with some better genetics for feeding and finishing on grass.

"It was great for our cash flow to rely on the conventional cattle market, especially as prices were higher over the past few years, but now that we see the demand for the grass-fed beef, and how we enjoy the process of raising them, we hope to get deeper into that in the future," says Stozek.

One thing that has helped them become successful is using the resource base they have in the way that makes the most sense for them. "We'd be crazy to have anything



**“A lot of what we’re doing,” Stozek acknowledges, “is focusing on what’s working in terms of financial success.” That’s meant a change in commodities, but not in values.**



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Getting “real” with social media helps Schram connect to a market that knows more about food.

but working livestock on this type of land. It's not meant for anything else," says Stozek. "What makes our honey marketable and successful is getting floral diversity into the nectars. There are all kinds of tame and native perennials such as wild flowers, alfalfa, and clover that give us the consistency and texture that everybody just loves. We may not get as much productivity as if we had our bees in the middle of a canola field, but people love the flavour, and it's something that's unique."

The couple are also more active on social media, which they use to help build relationships with customers who can't always take the two-and-a-half hour trip out to the farm.

"We are doing a lot of social media with pictures and videos, and little interviews, and I think it's helpful in putting some reality into what we do," says Stozek. "We try not to focus on just the cute, cuddly stuff; we try to give people a good dose of as much reality as we can through our information sharing."

Their farm is definitely more successful and profitable than it was five years ago, not just because of the improvements they have made to the land, but also because of the awareness of their customers.

"There's a lot of people now that are more educated and tuned in to what's happening in the country and they're looking for what we have, so it hasn't been so much about us educating people as just being there to provide what they want," says Schram. "There's more and more people coming to us every month who are interested in what we're doing and what we have."

Still, financial challenges, particularly with cash flow, remain very real — especially when the grass-fed beef program requires animals to be kept on-farm for as long as two years before providing income.

Accessing credit — especially as new farmers starting out — has its challenges. "It's very much a 'chicken and egg' scenario. If you don't have the equity to borrow against, it can be quite difficult to gain access to credit," says Schram, who adds they were able to make some informal leasing arrangements with family to help them build their initial livestock herd. "We feel fortunate to now have access to credit at low interest rates, which has helped us in the initial capital investment years. Compared to the interest rates our parent's generation were facing 30 years ago, this is a good time to access financing."

Despite the challenges, Schram and Stozek have never regretted their choice to farm, and for Stozek, the pride and sense of accomplishment he felt the moment their first calves hit the ground was all it took to reinforce the belief that he'd made the right decision.

Schram's "ah-ha!" moment came with one of the first deliveries to Winnipeg, she says. "I realized how important the process and relationship of selling food directly to the families who would be eating it was, and the excitement of both parties to be a part of a local food economy."

## BECOMING A PART OF THE COMMUNITY

Being an accepted part of the community, and helping it to grow and thrive has always been important to Schram and Stozek, who admit that when they first started out with their CSA enterprise there were quite a few people rolling their eyes. That has changed as conventional farmers and others in the area have grown to understand the value of what they do — and that they know a thing or two about providing good, healthy products.

"I think just by doing this long enough, and showing people that we've had some success, and we're not all that different in a lot of ways, it has validated the way we do things in people's eyes because at first, the way we produced and marketed our products was quite foreign to most people in our community," says Stozek. "Now, we sell products to people in our community, and it means a lot to us when people come and stock up with a bunch of honey as their Christmas gifts. There's something to be said for providing food to our neighbours and friends, and it really helps to strengthen those relationships."

## FACING THE CHALLENGES AHEAD

In future years Schram and Stozek want to build a farm that is profitable, and more resilient to some of the effects of climate change that they feel will become one of the biggest challenges facing agriculture.

"There are going to be lots of vulnerabilities with weather, be it drought or excess moisture... the more organic matter we can get into the soil, the less vulnerable we'll be to those swings," says Stozek. "Hopefully at some point, there will be a proactive enough policy scheme where we might get rewarded for some of those efforts. There's not currently enough incentive for people involved in agriculture to keep their shelter belts for the role that they play in carbon sequestration and biodiversity, or to maintain sloughs that help hold back water. It's almost the opposite; there are incentives to get rid of them at this point. The things that motivate us to do what we do are just trying to minimize risk and vulnerability, and increase enjoyment and profitability."

Schram and Stozek's biggest change is yet to come, as they are expecting their first child in the fall. "Another continuing goal, and we have not mastered it yet, but I think now we are starting a family we need to get a lot better at, is just taking more time for us," says Schram. "That's a big part of holistic management, is taking time for family and friends and not working yourself to the bone."

"A lot of what we're doing is focusing on what's working in terms of generating financial success," Stozek acknowledges. But, he says, they haven't changed their basic strategy. "If you don't enjoy what you're doing, you're not going to give it the kind of energy that it deserves."



After five years, Lee-Anne and Riley are convinced they made the right move. In fact, they're more enthusiastic than ever about the future for new farmers.

## Riley and Lee-Anne Kemp

**I**n the five years since *Country Guide* last caught up with Riley and Lee-Anne Kemp, their lives have become even more hectic.

For starters, their family has grown to three children — six-year-old Lexi, three-year-old Elliot and Halle, who just turned six months old. Riley still works off farm as a teacher at the local school, while Lee-Anne has ventured into her own physiotherapy practice in the area.

### FOCUSING ON EASE AND EFFICIENCY

Add to that the fact that they are now equal partners with Riley's parents in the family farm business and there isn't a lot of down time, which means they've had to focus on making their farming system more efficient.

"We're trying to make the system as manageable as possible," says Riley Kemp. "Dad still does most of the day-to-day jobs himself, and I try and do most of the planning and management. But we are constantly looking for ways to make our system as user-friendly as possible, which means cattle that are durable so that we don't have calving problems and we're not out there with a Medi-Dart and penicillin every day. It's looking at how do we cull, how do we improve our herd so that problems that can be major time eaters are not present or are

as rare as possible. We're trying to go with low maintenance cows that work with our system."

The farm has expanded its land base and cow herd since 2012. "Our personal herd is at 75 head, but Dad and I run about 150 cows as a unit," says Kemp. "We've added another quarter section and just purchased one of our rented quarters. We've been trying to focus on genetics and getting the right type of cow, and we hope in the next couple of years to move towards direct marketing grass-fed beef."

They have employed their holistic management training to increase their carrying capacity and extend the grazing season, which has had a positive effect on the bottom line. "The greatest change we've seen in the last five years is the productivity of the pastures and the lack of erosion that occurs now. It's tough to walk out and see bare ground, whereas before you could," says Kemp. "For example, in 2012 we were dry and many people were feeding hay by September, but we were still grazing in October. Our cattle are consistently grazing until mid-November so we are seeing tremendous changes that way. On pasture they do so much better and are producing more. We can achieve a higher stocking rate, so we're

CONTINUED ON PAGE 20

With Riley and Lee-Anne both still working off the farm, rigorous planning is key for making the farm as efficient as possible.



able to run more animals on the same land and for longer periods of time. Our most expensive cost has been to acquire more land, so to be able to produce more pounds of beef per acre is almost like getting some land for free, and we're more profitable in the end."

## MAKING SURE THEY GET IT RIGHT

The Kemps' goal has always been to direct market all their beef, but they are taking a measured approach to growing the farm business, and they're taking the time to make sure their product is right before they take that plunge.

"We are not totally satisfied with our product yet," says Kemp. "I know that we could probably wait around forever trying to make things perfect, but we're just trying to get to where we want to be before we jump in. I don't want to work hard to gain customers and then lose them because we don't have the right product or what they're looking for. I think we're not far off at this point. We're hoping to direct market grass-fed beef within a calendar year of now."

They also want to expand their product line by offering pasture-raised chickens and pork in the future, but are taking the same methodical approach. "We've always raised chickens for our family, so we're going to try some pasture-raised poultry this year for our own use because I'd rather test the product on ourselves than on potential customers," says Kemp. "But the idea is to add that product when we take beef to market and maybe pork down the road as well. We want to be more of a one-stop shop."

## EXPLORING NICHE MARKETS

Marketing to larger, urban areas — like Winnipeg and Brandon — is definitely part of the plan, and the Kemps have contacts that may help them move into a niche market. "My brother lives in Winnipeg and runs in triathlons, and associates with a crowd that is very health conscious,

**There's room for people who want to grow a great product," Riley says. "As long as that continues, there'll be places for young people to start."**

so we're hoping that might help us tie into a market," says Kemp. "We're just starting to look into how we're going to develop our market because, again, I didn't want to go and try and attract customers and then tell them they have to wait, because then they go and find someone else. I am hoping that we can create a buying club or something similar where we can stock to a location and sell to our regular customers on a certain time frame."

They have done a lot of homework, chatting with other farmers who direct market their products, seeing how they do it and learning from their mistakes, which most are more than willing to share.

"The great thing about people who think the same way we do is that they're just so willing to share their failures and say this is what doesn't work, and this is why it didn't work for us, and this is what you're probably going to need," says Kemp.

"Troy Stozek and Michelle Schram sell a lot of product directly and they're just a tremendous resource to have in our area because they understand some of the perils, and pitfalls, and the challenges associated with selling large amounts of product to consumers, things like storage and the cost involved and all the other questions that come up."

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# HARDEST WORKER ON THE FARM.

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## TOUGH TO BEAT IN THE LONG RUN

## SETTING UP FOR TRANSITION

Their focus was, and remains achieving their goal of direct marketing their beef and future products, but they've also been trying to create time for their growing family, as well as prepare for the transition of the farm when Riley's father Kim, who is 63, decides it's time to take a smaller role in the daily operations.

By then, the aim is to have at least one of them working full time on the farm. "We will continue to focus on planning so that things run as smoothly as possible," says Kemp. "We've had lots of conversations about when our 50/50 partnership will end and this will be my baby. Dad's certainly not talking about slowing down right now, but we're trying to put ourselves in as good a position as possible so that when that time comes we're able to make that transition."

The Kems still believe that young people can make a good living from farming, especially if they are open to new ideas and look objectively at the opportunities and different management models that are out there.

"It's going to be hard work and challenging, but I think that with some good management techniques, people are doing tremendous things," Kemp says. "I don't think we're even close to what lots of people are doing with growth of grass, and diversity of livestock, and planned grazing. There are incredible opportunities for people who are following similar paths."

Then he adds, "A conventional model of expensive machinery and grains and inputs is going to be next to impossible for anyone who doesn't marry in or inherit... but there's still room for people who want to grow a great product and there are people that are looking for a great product. And as long as that continues, there'll be places for young people to start and be profitable."

## Wayne and Maria McDonald: McDonald Farm

**W**ayne McDonald has never had a job off the farm and admits that he has no idea what nine-to-five is all about. That's the way he likes it.

Now, thanks to some hard work and their very dedicated focus, he and wife Maria have managed to achieve one of the key goals they set themselves five years ago, which was to create a way that both could work full time on their third-generation family farm.

They have achieved that, in part, because they have grown the direct-marketing side of their business to the point where they sell virtually everything the farm produces direct to customers in Winnipeg, Brandon, Thompson, Gillam and Churchill.

"Five years ago we had a goal to market everything that we raised directly," says McDonald, who farms 1,120 acres near Cartwright. "We've got to the point where we have as many animals as our land can handle comfortably, and we're direct marketing all of our beef and pork."

## GETTING TO KNOW THEIR CUSTOMERS

McDonald estimates the direct marketing side has tripled, if not quadrupled over the past few years. McDonald Farms hasn't advertised for over seven years thanks to loyal, repeat customers and word-of-mouth referrals, as well as a more informed public that knows what it wants and sets out to find it.

"People approach us for two main reasons: they want to know where their food comes from, and they want to know who's providing their food, meet them and shake their hand," says McDonald.

Many customers are concerned about animal welfare and don't always have a positive view on farming practices. "They want to know that the animals are being raised ethically and sustainably," says McDonald. "The large, industrial hog barns have turned a lot of people off of pork in general. The people that approach us are interested in how our pigs are raised outside and not confined in any way."

The biggest change over the past five years has been the growth of the farm's sheep





For Maria and Wayne, holistic management coupled with direct marketing has proved a reliable way to achieve their farm goals.

operation to 1,000 breeding ewes, which also now serves the conventional market, which in a way gives the farm an edge.

"We market a bit differently because we lamb in June, so our lambs are smaller during the Christmas period, when a lot of people are marketing their lambs," says McDonald. "Our lambs stay on the farm and I wait until there aren't as many on the market, then mine are ready and can be shipped. We are taking advantage of holes in the market because of how we manage and raise our animals. None of that is an accident. We're thinking about how to work with Mother Nature, and as a result of that, we have animals available for a conventional market at a time when most other people don't."

#### ACHIEVING MILESTONES

Maria gave up her part-time job as a health care aide when their first child, Emma, was born four years ago. She has taken on the bookkeeping responsibilities for the farm, and is busy helping out where she can and managing Emma and her younger brother, Ethan, who just turned one.

Because the couple have hit the milestone they set in terms of direct marketing

and maximizing the number of animals their land can carry, they have begun to diversify their product line, adding free range eggs, chicken and turkeys.

"We've hit our main goal and we're trying to figure where we want to go from here," says McDonald. "A lot is going to depend on what the kids want to do. I know they're really young yet but we have got to be looking at the sorts of things they enjoy, and maybe incorporate them into the farm in case they express any sort of interest down the road. That's a longer-term goal."

In the short term the plan is to continue to increase the productivity of the land base they have, rather than buying more land, which, at the high land prices in their area, isn't really an option at the moment.

"Our limiting factor here is water. If it gets dry, grass just doesn't grow. So we try to retain as much water as we can on our place," says McDonald. "Every year our policy is to spend some money to improve our pastures by spreading grass seed and that sort of thing. We roll out hay to improve fertility and concentrate on growing grass, then have the animals to harvest the grass, so our goal is to continually improve the land base that we have."

#### GOALS KEEP EVERYTHING ON TRACK

The McDonald family are long-time holistic management practitioners. Wayne's father, Jim McDonald, took a holistic management course in 1992 and was one of the first farmers in the area to adopt a regenerative system of rotational grazing and management based on holistic principles of land, people and profit. Wayne took the holistic management course as well and was invited to participate periodically in the holistic management group which used to meet regularly in the Cartwright area.

The biggest thing their holistic management training has taught them has been the importance of goal setting. "I've known people that are doing a thousand different things, and not accomplishing anything because they're not following a trajectory that makes any sense for their farm," says McDonald. "It's almost impossible to progress in any kind of business if you don't know where you want to go."

Plus, McDonald finds "having the ability to sit down and brainstorm, and come up with short-term, intermediate and long-term goals, gives you the ability to self-check

CONTINUED ON PAGE 24



“There was no particular time when I realized we were going to be successful,” Wayne says. “We just kept making incremental progress.”

and assess whether the things that you’re doing now are going to help accomplish your goals next year, or five, 10 or 15 years from now. It helps point your effort and focus in the direction that is most beneficial to yourself, your farm, and your family.”

As an example, a major target is to get production costs as low as possible. “We have never wanted, and still don’t want huge overheads in terms of buildings and capital costs,” says McDonald. “I have a barn that was built in the ’60s that’s 20 feet by 60 feet and that’s it. I don’t have a mile of barn that I need to maintain and pay for. We calve, lamb, and have pigs out at pasture in June when it’s nice out and I don’t need to worry about having buildings for everything... that’s one of the things that we look at for cost savings.”

For the first five years after he returned to the farm, the McDonalds managed the operation without an operating loan or line of credit. “If we couldn’t afford to purchase something out of cash flow we didn’t purchase it,” says McDonald. “It wasn’t that we were opposed to operating credit, but our farm was relatively small potatoes at the time and no lending institution was interested in extending the small amount of credit we felt we wanted. Over the past 10 years, as our operation has grown, accessing credit has become easier. That said, we still believe in debt reduction and making sure that our financial ratios are optimized.”

## A FARMING STYLE THAT FITS

McDonald wasn’t always certain that farming was the best career choice, and he took some time to explore what other career paths there might be for him. After going away to university at 18, he essentially stayed away from the farm until he was 27, taking time to learn about farming systems in other countries, and obtain his masters degree. “Part of the initial impetus to continue my education was the general consensus that there was no future in farming,” says McDonald. “After being away for nine years I felt that I wanted a lifestyle change and desired to move back close to home. My father and I had a number of discussions about future directions for the farm and I agreed to come back and become involved with the farm again. One month after I got back we had 250 sheep dropped off and began to move the farm in a couple of new directions. There was no particular time when I realized we were going to be successful. We just kept making incremental progress towards our goals.”

Over the past five years, the family has made some concrete steps in the transition process that began informally in 2002 when McDonald came back to farm. McDonald has gradually assumed more of the management responsibilities, and says the whole process has been made a lot smoother because, again, of setting some mutual goals for the business.

“If my father and I had drastically different goals for the farm, it would be tough to figure out how to progress but we’ve a similar general sense of where the farm should go,” says McDonald. “I maybe do things a bit differently to what he would have done, but generally speaking, the farm is going along the way we both would like. For instance, he had no desire to do any direct marketing. That’s something I decided I wanted to do and, along with Maria, we’ve put a lot of time and energy into that, and we’ve grown it into a successful business. It all still works with the overall goal of the farm in terms of sustainability, and holistic management, and rotational grazing, and multi-species grazing.”

The McDonalds are convinced that the holistic management style of farming can be a fit for both new and experienced farmers.

“It teaches how to set goals, and it’s a philosophy that allows young people to get into farming without having to invest hundreds of thousands of dollars,” says McDonald. “It’s about ways to be successful farming on a quarter section or 40 acres. There are people that have been farming for decades who are interested in holistic management as well because it makes sense. Just the goal-setting alone is valuable, even if you’ve been farming for 30 years, just to be able to think about how to set goals and how to shift paradigms.” **CG**



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# Farmers needed

With a projected \$22 billion in sales, Canada's new cannabis market is generating a very heady kind of buzz in farm circles

BY SHANNON VANRAES / CG FIELD EDITOR

**W**orking in total darkness, Thaddeus Conrad carefully feels his way up a nearly vertical set of stairs before switching on a single green light.

The bulb casts a weak, eerie glow, revealing a room packed with heavily budded marijuana plants.

But don't jump to the wrong conclusion. There's nothing clandestine about the hazy light. Pure and simple, this is great crop science at work.

"I like to keep them in total darkness the last three days," Conrad says, speaking over the hum of numerous fans. "It brings out those trichomes."

President and CEO of the Med-Man Brand, which he describes as a "weed-seed-feed" company, Conrad is philosophical when it comes to marijuana's medicinal properties, but fastidious and technical when it comes to agronomic practices.

Inside a nondescript cluster of buildings south of Steinbach, about an hour southeast of Winnipeg, Conrad carefully measures nutrients, conserves moisture, monitors temperature and controls light at each stage of plant development.

His horticultural expertise has been hard won, and now, as Canada prepares for the legalization of recreational cannabis — the newly dignified term bestowed on pot, weed, Ganja and Mary-Jane — his skills are in high demand.

The federal government introduced the Cannabis Act in April, which stipulates that legalization occur sometime before July 1, 2018. With it comes a deluge of interest from investors and startups looking to cash in on a market estimated by some at more than \$22 billion.

As of May 25, Health Canada had received 1,665 applications to become licensed producers of cannabis for medical purposes. Of those, 265 have been refused, 69 withdrawn and 858 deemed incomplete. Still, 45 licenses have been issued, and about 30 are actively producing cannabis.



Partly, the low approval rate is because, although many people have brought cash and business acumen to the table, few have stepped forward with the agricultural expertise needed to consistently produce high-quality cannabis.

"I think the biggest thing is that we have seen some people become licensed producers that don't have the agronomic background to grow on a commercial level," says Dan Clarke, executive vice-president of business development and agronomy at A&L Canada Laboratories. "They had to learn really quickly, and they made expensive mistakes... the agronomy always has to come first or you are just not going to have a quality product."

Clarke grew up on a cow-calf operation in Ontario before studying agronomy, first working with medical opium in Australia before moving on to medical cannabis, a plant he says has been underestimated in terms of production challenges.

"Some of these licensed producers, some of the initial

PHOTOGRAPHY: CHRIS PROCAVLO



ones, came into it and thought, well, marijuana is a weed, you can grow it anywhere,” he says. “And that statement is true, but we’re trying to grow a high-yielding, high-quality, safe product and there are certainly agonomic things that need to be looked after.”

Primarily, says Clarke, “Medical cannabis is no different than growing canola or cherries or corn or alfalfa. At certain growth stages it has certain requirements for nutrition and we have to make sure we are meeting those requirements.”

Back in southern Manitoba, Conrad blames police forces for spreading the idea that potent cannabis can be easily produced by lazy and itinerant criminals.

“The establishment has tried its best to shame marijuana users and marijuana producers, and a part of that shame is convincing the general public... that you plant seeds and you go on vacation to Jamaica for three months and then you come back and you collect a million dollars,” says Conrad, who is permitted to produce medical marijuana for himself and three others.

“What police and RCMP have always told me is, ‘You’re taking the easiest way out’ and you know what the biggest irony of those ignorant statements is? It’s that I have lived the hardest life of anyone I know... I’ve endured beatings from police, I’ve endured jail, I’ve endured petty court cases.”

Reaching into a warmly lit growth room to turn down speakers playing classical music, Conrad adds that in some cases there is also a reluctance on the part of licensed producers to hire growers who honed their skills in the black market.

“These corporate bigwigs aren’t hiring the right people,” he says. “They don’t want experienced people.”

Already, production issues have led to marijuana recalls in Canada. Random testing by Health Canada at Hydropothecary Corp’s facility in Gatineau, Que., this spring found leaf samples that tested positive for myclobutanil, a mildew-killing agent that becomes hydrogen cyanide when exposed to heat.

Other licensed producers have issued similar recalls in recent months, including Aurora Cannabis, Organigram Inc. and Mettrum Ltd.

“You can see that as an industry we are very young and infantile,” says Cole Cacciavillani, co-founder of Ontario-based Aphria.

**“These corporate bigwigs aren’t hiring the right people,” Conrad says of the country’s first legal marijuana operations. “They don’t have the farmer mentality.”**

It won’t be easy to manage the crop’s tricky biology, including these trichomes. ▶



**CONTINUED ON PAGE 28**

The industry, he says, has been sending out messages that legally produced cannabis is healthy, and much better quality than what you can buy on the street. “We haven’t been able to make that claim without getting ourselves into trouble,” complains Cacciavillani. “We have to get there, we have to be able to tell consumers we are there.”

With 30 years of experience in the greenhouse industry, Cacciavillani says Aphria is probably the “only truly agricultural player” in North American cannabis. So it’s no surprise that Cacciavillani is critical of the federal government’s decision to leave Agriculture and Agri-Food Canada on the sidelines as legalization approaches.

Leaving the regulation of crop production entirely in the hands of Health Canada, he says, has contributed to more hurdles for marijuana producers.

“In all fairness to Health Canada, I don’t think they realized the whole scope and dynamics, and the geography, and how this whole thing really works,” Cacciavillani says. “When you actually start to get down here and you manage it, and you really have to start to ramp up production, that is where some of these issues are.”

Luc Duchesne, the chief science officer at WeedMD Rx disagrees on that point, at least in part. While he accepts that Health Canada has a steep learning curve ahead, the biochemist says the agency is a better choice for the regulatory tasks ahead than other government agencies.

“There is a need to educate the regulator about the biology of the plant, but it’s not a deficit... we can all

collectively get a better understanding of the biology of this crazy creature that is cannabis,” says Duchesne. “Growing cannabis is really hard, it’s complicated.”

Cannabis, he says, “is a living organism that has all kinds of peculiarities that makes things very, very complicated for anyone trying to do it.”

Supreme Pharmaceuticals, which operates a federally licensed cannabis production subsidiary called 7ACRES in Kincardine, Ont., hired Conrad to get its production system up and running.

“It is an honour to have him,” Supreme’s executive vice-president Brayden Sutton told the *Financial Press* at the time. “He brings with him decades of practical experience, as well as a large and loyal patient following.”

Other Canadian cannabis companies have similarly turned to private consultants in an attempt to manage production issues and build agricultural expertise. Meanwhile, however, conventional farmers have remained on the sidelines as the country moves towards legalization.

“There are some other agricultural guys now looking at this space and trying to decide to get in, but capital becomes an issue,” says Cacciavillani.

Clarke agrees that capital costs are a barrier for conventional grain or livestock producers interested in diversifying with cannabis, but notes that stringent regulation is also a drawback — not to mention costs associated with security. Still, he says some farmers are tire-kicking the idea, particularly if they have surplus buildings or are in an industry with transferable infrastructure, such as greenhouse production.

“The other thing is, and this has nothing to do with crop production or anything, but some people just have a moral issue with it and that becomes a bit of a challenge as well,” Clarke adds.

Others think the technical aspects of cannabis production could be why conventional farmers are steering clear of the emerging crop.

“This is still very specialized agriculture. And part of the problem, what makes it so specialized, is the regulatory framework that you’re bound to carry with you,” Cacciavillani says.

“Even I found it quite overwhelming,” he says. “We brought in people from the pharmaceutical world to deal with the regulatory side of it.”

Concerns about monoculture have been raised by the cannabis community as large players prepare for legalization, but Conrad and others believe once the groundwork is laid, craft and specialty growers will find a home in the market. These niche markets could be more enticing to farmers looking to diversify as well, says Clarke.

Still, many questions remain about how legalization will work. While the expectation is that the medical cannabis producers of today will be the recreational producers of tomorrow, exactly how that transition will occur is yet to be determined.

What is clear, though, is that today’s legal growers won’t be able to meet consumer demand.



“One of things we’ve learned collectively as licensed producers is that each facility has its quirks, and to be able to produce the best quality cannabis at high yields, it takes a little bit of time to get there,” says Cam Battley of Aurora, which operates a production facility roughly the size of 16 football fields at Edmonton’s international airport.

At full capacity, Aurora will be able to produce 100,000 kilograms of marijuana each year — just a fraction of the 800,000 kilograms of the annual demand Battley anticipates following legalization.

“The volumes that we’re going to need to supply... they are incredible and we cannot grow those volumes in isolation wearing loud shirts and playing loud music. That’s not going to cut it,” says Cacciavillani.

Still, Cacciavillani sees smaller players entering the market in the coming years.

One of the big questions, however, is how many small-scale producers will be allowed to go after a slice of the action.

Battley speculates Health Canada will limit the number of growers at some point. “I would imagine that they are looking for a system that they are capable of regulating, and to me that means, not thousands of producers, but a manageable number,” he says.

For its part, Health Canada declined to be interviewed for this story.

As if existing production challenges weren’t heady enough, Cacciavillani sees fresh challenges on the horizon. For decades, cannabis strains or varieties have been bred for increased levels of tetrahydrocannabinol — better known as THC — or for specific cannabinoids like cannabidiol. Black market breeders have not necessarily focused on developing disease resistance, although even if they had it might be moot. Legally obtaining genetic material takes businesses down a winding, shifting path with limited choice.

Initially only one strain of cannabis was on offer from the Canadian government — developed from seeds seized by law enforcement, according to many in the industry.

Today, many cannabis strains have worked their way into the medical market one way or another, giving licensed producers new options. Still, there is concern about the process of legitimizing black market genetics.

Cacciavillani suggests another solution to the problem, one so far removed from the philosophy of many growers and consumers it drew an audible gasp from the crowd when



**This is still very specialized agriculture,” warns Aphria grower Cole Cacciavillani.**

he mentions it at a Cannabis Canada forum held in downtown Winnipeg earlier this year.

“The Monsantos of the world, the Syngentas of the world need to be involved,” Cacciavillani says, adding biotechnology is the only route to managing pests and disease without relying solely on pesticides. It’s a contentious issue, with some at the forum immediately voicing their opposition to what was dubbed “Roundup ready cannabis” by attendees.

“We’re going to have stuff hit us,” Cacciavillani responds. “One of the problems we’re going to have is that these places are continually producing and we’re going to start to introduce disease, and then we’re going to start to have mutations of diseases that we haven’t even seen yet, and we’re going to need help when that happens.”

Stepping out of his grow rooms, past some small Health Canada signs and into the soft afternoon light of summer, Conrad says he respects all the work and business skills cannabis startups have brought with them, but stresses that producing marijuana takes more than investment dollars.

“Where they fall short is they don’t have the farmer mentality. They have a corporate, capitalistic mentality,” he says. “If you talk to any farmer... you will actually notice how different their mentalities are.”

In some ways, Conrad doesn’t see himself as a grower at all, but rather as an environmental balancer. “The plants are doing the growing,” he says, adding that in time the cannabis market will also find balances of production versus quality, large-scale versus niche, and medical versus recreational.

And amid all the questions, Conrad hopes Canadians take a moment to step back and look at the big picture.

“People need to realize that the prohibition of cannabis had nothing to do with the plant and everything to do with infringing on our human rights. It’s not a plant or substance issue but a human rights and human freedoms issue,” he says, adding, “Anything that is good for human rights is good for our economy and it’s good for jobs and it’s good for everything.” **CG**

# A co-trustee's responsibility

If asked to serve as a co-trustee, be aware that acting as a rubber stamp will not protect you if things go wrong

**W**hen drafting a will, parents often name more than one of their children as the trustees of their estate. Given the dynamics between siblings, it is not uncommon for one child to take on a more active role than another in administering the estate.

However, in a recent decision, the Court of Appeal for Ontario has made clear that passive involvement as a trustee does not meet legal muster. Each estate trustee must take an active role in exercising his or her judgment and discretion on every matter relating to the administration of the estate.

If a problem arises, a trustee will not be exonerated for passively acquiescing in a co-trustee's decisions or actions.

The case arose from a will in which the testator, Thomas Cahill, appointed his daughter, Sheila, and his son, Kevin, as executors and trustees of his estate. They

not mention a trust for the benefit of Patrick. He included the account information for Michael, another brother, under the heading "Information for Pre-Authorized Payment Agreement/Direct Deposit."

In the years that followed, either Kevin or Michael would withdraw funds from the investment account and make the required \$500 monthly payments to Patrick. This continued until the spring of 2014, when three consecutive monthly cheques were returned for insufficient funds. After this, the brothers made no further payments to Patrick.

Patrick later discovered that Kevin had borrowed the remaining money in the London Life plan as a "mortgage" for his business premises. When the business failed and the bank realized on the premises, there were no funds left to pay Patrick. Patrick then brought an application for payment of his entitlement under the will. He also sought

Deceased had merely wished Kevin alone to have absolute authority and to make all decisions with respect to the Estate, he would not have appointed Sheila as an executor and trustee. Sheila's appointment in that role must be seen as reflective of the Deceased's wish that she not simply acquiesce to or rubber stamp anything suggested or done by Kevin. Sheila was obligated to exercise her own judgment. She completely failed in that duty.

The Court held both Sheila and Kevin responsible for the outstanding principal necessary to fund the monthly \$500 payments to Patrick.

Sheila appealed. The Court of Appeal dismissed the appeal. It confirmed that each trustee must take an active role in exercising their judgment and discretion on every matter relating to the estate. Sheila's passivity did not protect her. As the Court put it, "doing nothing was not a luxury available to her as a co-trustee."

This case is a good example of the common law obligations and duties that apply to trustees in all provinces. It has long been recognized, including by the Supreme Court of Canada, that the standard of care and diligence required of a trustee in administering a trust is that of a person of ordinary prudence managing his or her own affairs.

Co-trustees must recognize and understand that they are obliged to take an active role in fulfilling their duties as trustee. They cannot sit idly by as their co-trustee manages the estate. If they cannot or do not wish to participate in the administration of the estate, then they should renounce their appointment. Otherwise, they may be exposed to liability when something goes wrong. As Donovan W.M. Waters, a leading trusts scholar once wrote: "[A trustee] is not entitled to shrug off the wrongful actions of a co-trustee on the basis that he knew nothing of what the other was doing." **CG**

**Nadia Campion** and **Sarah Walker** are business and estate litigators at Polley Faith LLP. Their clients include small- to medium-size businesses, individuals and associations across a wide range of sectors, including in the farming community. They can be reached at 416-365-0550 or [ncampion@polleyfaith.com](mailto:ncampion@polleyfaith.com) / [swalker@polleyfaith.com](mailto:swalker@polleyfaith.com).

## Each trustee must take an active role in exercising their judgment and discretion on every matter relating to the estate

were directed to set aside \$100,000 in a trust fund for the benefit of their brother, Patrick. The will specified that Kevin would be the trustee of Patrick's trust fund with "sole discretion as to the investment of the monies" in the fund. Patrick was to receive a payment of \$500 each month from the trust fund.

After Thomas died in 2010, Sheila and Kevin arranged for his house to be sold, with net proceeds to the estate of \$223,013.75. Sheila and Kevin both signed a direction to the estate's bank to issue a draft for \$100,000 from the estate's account, payable to London Life, with which Kevin opened an investment account. On the application form, Kevin described himself as the annuitant and Sheila as the contingent policy holder. Kevin did

to remove Sheila and Kevin as executors and trustees of the estate, and Kevin as trustee of his trust fund.

During the course of the litigation, Sheila's lawyer wrote the following to Patrick: "Neither Sheila nor her children received the money from the house sale, Kevin did. I do not know what he did with that money. But one thing for sure is that Sheila and her two children do not know either. They are not liable to you in any way."

The Court disagreed. It found that Sheila was negligent because she had abdicated her duties as executor and trustee of the estate. She was required to take "real, active steps to ensure that the trust fund was set up in accordance with the Will," but she failed to do so. The Court stated: If the

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# Let's get real

The 2016 ag census misrepresents the state of succession planning on Canada's farms. Here's why that matters – a lot – for your decisions in coming months

TOM BUTTON, EDITOR / COUNTRY GUIDE



**I**f you told a roomful of bright people to come up with a census question to underestimate how much thought farmers have put into succession planning, you could hardly have produced a better choice than the question that Statistics Canada actually asked.

Do you have a written succession plan? It's a question that only works if you believe, as StatsCan apparently believes, that unless you have a formal, written plan sitting on a shelf, you're totally unprepared for succession.

It's also the only question that can get us to StatsCan's bald statement that a mere 8.4 per cent of farms are ready for what comes next.

The weaknesses in this are so clear, they hardly need raising, but let's consider the most obvious. Succession planning might take two to four years, and if you've gone 90 per cent of the way through the process, you've had the family meetings, you've changed who does what on the farm, you've brought in your banker and accountant, you've taken out insurance policies, you've done everything except sign off on some written document, does that mean you're unprepared for succession?

I'm a believer in planning and I'm a believer in communication, and I believe in written plans in part because they help ensure you make progress on those goals. But even I have to admit that the work that goes into producing and revising a written plan isn't going to happen on every farm, and they'll end up okay anyway.

The problem here is that, once again, the intelligence of farmers is being sold short. In Ottawa, the take-home is that farmers are sitting on half a trillion dollars' worth of assets and aren't on the ball enough to know that they can't just let everything sort itself out on its own.

This kind of paternalism rarely ends well.

Worse, it creates confusion. It makes me want to ask detail questions, like whether the 7.6 per cent of farms that produce over \$1 million in annual sales and that produce 60 per cent of Canada's farm receipts are essentially the same farms as the 8.4 per cent that have written succession plans.

Instead, we should be focusing, as writers Maggie Van Camp and John Greig do in this supplement, on what takes a succession plan from good to great.

Just because a plan is written doesn't mean it's the best possible plan for that farm, or even that it's realistic.

Clearly, the most significant learning from the 2016 census is how difficult it is to grow today's farms. Yes, farm size is increasing, but only by about one per cent per year.

If the census had asked farmers in 2011 how much they hoped to grow, and how much they were ready to grow, Ottawa would get a shock.

Succession is the foundation not just for asset transfer, but for farm growth, profitability and sustainability. It will also be hugely important to Canada's competitiveness.

It's time to get real about our farmers.

Are we getting it right? Let me know at [tom.button@fbcpublishing.com](mailto:tom.button@fbcpublishing.com). ▀

**GWEN PADDOCK**  
NATIONAL DIRECTOR,  
AGRICULTURE  
ROYAL BANK OF CANADA



**A**t RBC we know that farming is not only a way of life, but also an essential contributor to the Canadian economy, which is why we're proud to partner with farmers to help you deal with present-day challenges — whether that's volatile commodity markets, the fluctuating Canadian dollar, the need to establish public trust or making decisions about retirement.

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We're pleased to work with *Country Guide* to highlight the importance of succession planning and share some strategies you can use with your business. Should you have any questions, the RBC team of industry experts have worked with many other farm families to create effective succession plans. We look forward to the opportunity to partner with you. ▀

# SUCCESSION: *From good to great*

Follow these nine strategies for a better succession plan and a stronger family

BY MAGGIE VAN CAMP, SENIOR BUSINESS EDITOR / COUNTRY GUIDE



**A**n accountant, a lawyer and a farm financial adviser swap stories with me about farm families and succession planning. Perhaps not surprisingly, they start with the disasters. They talk about the overreactions they've witnessed, the pain, the gulfs they've seen between dream and reality, the costs, the broken families.

Quickly, though, the talk turns to the wins, and the stories are about the communication they've seen happen, the understanding that has grown, the preplanning that has begun, and the joy and pride that come alive when a family gets together around shared goals.

And we notice that in so many of these successes, there seem to be the same critical success factors coming up again and again and driving farm succession planning from good to great.

Often these linchpins put the family on a course to new levels of management and even happiness.

This article is our effort to get these linchpins into a format that you can share and that can elevate your plan above what any individual could achieve on their own.

Succession planning is a group effort, with parents, siblings, spouses and other family members, plus their bankers, professionals and advisers. And it is sticky with group dynamics, history and personalities.

*Country Guide* put together an advisory team with decades of experience helping families with succession. Our team includes:

- ▶ Darrell Wade, founder of Farm Life Financial Planning Group located in Peterborough, Ont.
- ▶ Reid Wilkie lawyer with Smith and Hersey in Medicine Hat, Alta.
- ▶ Dean Klippenstine, a CPA with MNP in Regina, Sask.

Each has a portfolio thick with farms they've helped, and each also has memories of the occasional succession gone wrong.

Mostly, they know how succession can create growth, ideas, and opportunities, and how it can bring families even closer together.

If you pull a chair up to the table, and if you roll up your sleeves and work through the tough issues, succession can yield unexpected rewards and teach powerful lessons.

Succession planning can be bigger than keeping the farm in the family... if you do it right.

## 1 BE OPEN TO RE-ENERGIZING THE FARM.

Every farm is different, but generally the upcoming generation brings new ideas and youthful energy to a farm business, and this combination of energy and fresh thinking can drive future success.

Even better, this can-do attitude can be contagious. Youthful optimism affects the older generation and often drives changes and expansion for the whole farm.

In fact, it even has a name — “the succession effect” — coined by English ag economist Matt Lobley at the University of Exeter.

“It's simply more fun when you have a younger person around who is full of energy, and ideas,” agrees MNP's Klippenstine.

As his clients get past 50, he says, it isn't unusual for them to become less motivated by money. He thinks that's because, compared to the effort and risk that it would take to achieve real growth, lifestyle doesn't improve that much when personal net worth rises from, say, \$1 million to \$3 million.

A young person will rekindle that drive, even if it's a non-family successor instead of a son or daughter. Klippenstine has helped a few farms where the children aren't interested

“The value of the farm assets becomes dwarfed by how much the members value their family,” says adviser Darrell Wade

in the farm and instead they've brought in a key person, setting up a profit-sharing agreement or maybe helping them obtain five per cent of the business. This allows the older generation to enjoy a better quality of life in retirement while bringing in hard-working younger, skilled people to drive growth.

## 2 FOCUS ON PROFIT.

Adding another generation to the decision tree will change the way decisions are made.

Perhaps today you can just make a decision and tell everyone what you've decided, but as you get into succession you'll have to make a business case for why it's the right step.

That's good, however, because numbers don't lie, and they aren't emotional.

At the same time, succes-

sion planning also puts the farm's financial performance on the table for everyone to examine, often because you need to find ways to generate another household income, and you need to look at the productive value of assets.

But this too is an opportunity. Succession planning shows farmers how powerful financial information can be to their farms.

As Wade says, there's nothing like a goal to motivate and teach.

Klippenstine adds that you can have the slickest, smartest, most congenial succession plan, but if the business doesn't make money or there's no plan to make more money, it isn't going to work.

So, while the parents might fear the younger generation could take the farm down with uncontrolled spending, Klippenstine finds that adding a younger generation usually increases financial success.

In fact, he says businesses should want to have young people on board. "They add energy, they add drive, they tend to create profit," Klippenstine says. "Adding young, smart, hard-working next generations can drive success."

Although younger farmers might draw more for lifestyle, Klippenstine has found they tend to look at farm decisions with sharper pencils and have a more realistic view of the cost of carrying inventory and non-working assets. In other words, they don't hold on to inventory as a security blanket, or keep iron around simply because it's a bother to resell it.

It's one reason why, instead of simply helping the next generation to borrow equipment and rent a quarter section on their own, Klippenstine sees

greater benefits with profit-sharing agreements for the whole farm.

Team work will help improve overall productivity, which needs to be a priority because no matter how smart the people are, and no matter how good their business plans, the farm won't be profitable if it doesn't produce.

"You can't fix that in the boardroom or in an accountant's office," says Klippenstine. "All my best growers are unhappy all season, they are constantly micromanaging their fields, trying to improve. That's why they are successful."

### 3 GET THE MATH RIGHT.

Over the 23 years Klippenstine has been helping farms with succession, he has found that having the right business structures in place helps the farm solve its soft issues.

For example, if the value of ownership is defined it will help keep the discussion out of the weeds.

The same is true of the division of duties and the ownership structure of the farm. Getting your processes right, including the paperwork, helps prevent disagreements before they occur, and typically allows for better conversations going forward.

However, this needs to be coupled with a focus on getting the math right, which is crucial for future success. This is why, for example, profit sharing with the younger generation may be a great mentoring tool, even with teenagers, but it needs to make sense financially.

"The business arrangement has to be good and solid before succession can occur," says Klippenstine.

This also means that the

financial structure of your business must make sense for operational reasons, not just for succession.

### 4 SET GOALS COLLABORATIVELY.

Succession requires clear long-term goals for the business and the family. These goals become very powerful when they're co-created, says Wade.

The process also identifies and quantifies gaps, which advisers can then help provide various solutions to fill. For example, if the older generation says equal treatment within the family is the problem, then the advisers should help quantify how much is needed to fill that gap and how to fill it. This could include potentially selling some land, giving shares, or buying life insurance.

People need certainty to move forward, says Reid Wilkie, and succession planning does that for both generations. It allows the successors to know the transfer is really going to happen and not just be hoped for, so they can do things like quit their job, plan for their personal future, or be more aggressive on expansion plans. "Today, it's almost impossible for most young farmers to buy land without their parents' collateral backing them up," Wilkie says. "Having something in writing gives them this ability."

Mom and Dad need to accept the change so the next generation can put their whole heart into the farm, but goals also help parents plan their own futures and their retirement, giving them the opportunity to choose whether they want a clean break from the farm, or if they want to die in the combine, or something in between. But at least everyone knows there's an agreed plan.

### 5 UNDERSTAND EVERYONE'S SITUATION.

Wilkie has found many older farmers, especially those over 80, sometimes don't really appreciate and understand their financial situations, including their net worth and their living costs.

But on the other side of the coin, sometimes the next generation and their spouses don't understand the difference between market value and productive value, and what it's like to farm with lower prices.

Higher farm values make both of those more challenging. Reality is that succession and estate planning become more complicated when the stakes get higher.

Farmers need to accept this, says Wilkie. Simple solutions don't always address the potential problems or take advan-

CONTINUED ON PAGE 6



**Parents may worry about the next generation, Klippenstine says. Usually, though, they create profit**

tage of the special tax rules for transferring farms to the next generation.

Recently, Wilkie has found more people are missing out on the capital gains exemption on jointly owned land served up as a simple solution. But he says there are many factors to consider and it's not just about managing tax. "As soon as you put someone's name on land, it drags you into the middle of their potential issues."

## 6 LEARN HOW TO HAVE MEETINGS.

Family business meetings are often adopted as part of succession planning, and then become an integral part of the farm. You might be the most open, caring family in the world but learning how to have good business meetings together is entirely different. Learning how to have regular business meetings can be the switch that changes how the farm is run overall.

"... Not at Mom's dinner table, not talking business on Sunday when the nieces and nephews can overhear," says Wade. "I show them how to do a good job at the first meeting, with a code of conduct."

Some families Wade has worked with even hire him to come back once a year

and chair the farm's annual meeting. It keeps the process ingrained and is a way for the family to stay engaged with an outside, informed third party.

## 7 USE ADVISERS BETTER, FASTER.

Succession planning helps families understand the importance of hiring good professionals like accountants, financial advisers, insurance agents and lawyers.

A third-party facilitator can also help build accountability and honesty into the communication and planning process. "Facilitators keep everyone on the path and ensure participation of all parties to co-create a plan to build the farm and maintain the family," says Wade.

Wade finds that usually by the time people call a succession adviser they're very motivated to get a plan done and just need a quarterback to ensure all the working parts are considered and that the process is kept to a timeline.

Succession planning teaches people how to ask questions of professionals and how to get the most value from them, and how to control advisory and consulting costs using preplanning and communica-

tion within their organization. "It's way faster and cheaper if there's been some advance planning, someone who understands the soft issues, and puts the personalities into context," agrees Wilkie.

It's important because time can become a significant factor. A recent Agri-Food Management Institute study of Ontario farmers found that compared to five years ago, more farmers are starting to scale down and hope to transition the farm in the next five years. But the median time it takes to create a succession plan is five years.

Succession can also make you ask questions about the professionals you're using, says Klippenstine. It doesn't hurt to get a second opinion from another professional, he says. "It's hard to know what people don't know... They can talk fast and draw fancy pictures, but do they know what they are doing?"

## 8 FACE YOUR FEARS.

Part of the succession process is to identify the big issues before you commit to working together permanently and before you transfer assets or build an estate plan.

At the same time, procrastinating because of fear is one of the most common killers of succession. "We understand the fears families have about having these difficult conversations, but not having them leads to many larger and greater problems in the future," Wade says.

One of the biggest problems with succession, our experts find, is that people don't start soon enough, not only because it limits the next generation but also because the older generation is beyond the hard work it takes to find good solutions.

## 9 IMPROVE YOUR 'FAMILINESS.'

Succession can drive the farm's success when the family learns to work as a family.

"One of the things I love about doing succession planning is the familiness of it," Wade says.

Family is more than the people, it's their history, their traditions and the general identity of the farm, Wade says. "The value of the farm assets becomes dwarfed by how much the members value their family."

Wade has found that succession planning can build on family because this is a time when farming and non-farming family members learn to value each other.

Non-farming members can voice their concerns but also begin to understand that tradition doesn't run a business — it takes smart, committed, risk-taking people.

Such discoveries help the entire family more toward a really satisfying resolution. "Create a participatory culture," says Wade. "It builds unity." ▴



**"You own and run a multimillion-dollar business, you need to treat yourself accordingly," says Alberta lawyer Reid Wilkie. "Your creditors, Canada Revenue, your children and their spouses are going to treat you like it's a multimillion-dollar business. You better treat yourself like that too."**

# Younger-generation farmers share succession tips

BY JOHN GREIG, FIELD EDITOR / COUNTRY GUIDE

## Three young farmers tell us why their succession plans are working

**C**laire Kincaid and her partner Greg Allison decided in the fall of 2015 that they wanted to farm in partnership with Claire's parents. Claire and Greg have their own farm, but their parents have larger holdings. Together they farm 2,500-acres near Nesbitt, Man.

Not surprisingly, their succession planning process is still underway, but Claire says several early steps have set the plan up for success.

The first was to actually have a written plan, one they have created with help from Jackie Gerrard of Backswath Management. Even if the plan changes, there are guidelines for the future that are comfortable for all involved.

Knowing the route ahead reduces anxiety for everyone.

"We still have a lot to figure out," Claire says, but they now have a good idea of when they will transition to farming more of her parents' land.

Claire and Greg's farm is called Bramble Grain Farm and her parents' Creevy Farm, but they run it as one farm. Greg works on the farm during the summer, and Claire works for Dow AgroScience. They have a plan in place that will allow them to move in a direction that works for everyone.

Meanwhile, at Embro, Ont., Nic Mutsaers is another young farmer who believes in starting early with succession planning.

His father, Jim, started the process when Nic was 18. Nic is now 26 and his father is 53, so they still have a number of years yet to work together. Their plan has set the guidelines for the transfer of assets and provides assurance for both the younger and older generation that their wishes will be met.

Nic has become a cheerleader for good succession planning in his community, where the Mutsaers milk 70 cows on their 200-acre dairy farm.

"I'm very open about this. I'm 26 and a lot of my friends don't have anything in place," he says.

Jim's succession experience with his own father was less than ideal, says Nic. He didn't want the same experience for his son.

"He was adamant we start early," says Nic, who remembers that his parents had him take a day off school when he was 18 to attend a succession education session.

"There was a guy sitting there my dad's age, with his dad, and they were just starting."

Advisers are also important. Their accountant, Larry Batte from Collins Barrow, had succession planning experience, as did his parents' financial adviser.

Nic credits several factors for the family being able to work within their successful succession plan to about the halfway point.

One step at a time, Nic has taken over more of the

farm management. First was the herd breeding, then the feeding, and then when they moved into their new barn in October 2013, more of the overall herd management.

By 2021, the transition plan will be complete. Jim and his wife Kim will still have a significant investment in the farm, but Nic will have control.

Nic says it is important that the plan has a built-in option for his parents to pull their investment if they don't like what is happening on the farm. It gives the older generation a fail-safe.

Near Tisdale, Sask., Ryan Bowditch's succession plan has recently resulted in his purchase of his uncle's farm.

Bowditch, 44, has farmed for 25 years with his father Fred and his Uncle Ralph. When Ralph decided he wanted to sell out his financial stake in the 7,000-acre grain farm and move off the farm and into town, Bowditch was ready to move out from town and onto the farm.

From the start, they knew pretty clearly how they wanted their succession plan to go.

"I'm pretty lucky because we were all on the same page, the three of us, and my wife and my aunt were all of the same opinion on what had to take place," say Bowditch. "Our management style is pretty much joint. We've farmed as a team for a long time and are very comfortable with each other."

However, they figured they could use some help to put the plan together, mostly to make sure that all the financial questions were answered.

Backswath's consultants helped them make sure all of their questions were answered, even some they hadn't thought about, and they also helped them access funding to pay for the succession plan through the provincial government's Farm Business Development Initiative.

Then Backswath Management helped them put the plan together. It took time, longer than Bowditch expected, although the biggest delay in the transition was the time it took to get the financing in place, even though the bank agreed that it made sense. Bowditch took ownership of the farm on May 1.

"It was time consuming. We spent a lot of time on it, no doubt," he says.

But it's also a signal to the younger generation that it's important to build good relations within the family, and that instead of acting with a sense of entitlement, the younger generation needs to prove that they are interested in improving their own skills, and that they understand the challenges they'll face.

Says Bowditch: "I can't imagine if someone is in a row with their family or one of the partners how difficult some of the planning would be." ▀



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**PG. 34** Cancer technology detects bin spoilage before cables.

**PG. 36** Buy a combine, or go custom? Here's how an economist decides.

**PG. 40** Are drones worth it? The answer is a definite maybe.

# CROPS GUIDE

## Turn up the heat on aeration fans

Some growers grappling with a late harvest and high-moisture crops in 2016 added supplemental heaters to their aeration fans. This grower's experience may inspire an upgrade to aeration setups for 2017

BY JAY WHETTER / CANOLA COUNCIL OF CANADA



For all three setups, Chad Bown had the heater between the fan and the bin. This fan-heater-bin sequence is recommended for canola.

PHOTOS: SUPPLIED

Things were a little off with Harvest 2016 and Chad Bown was desperate. The farmer from Ranfurly, Alta., was combining 14 per cent moisture canola in late November after a month or more of snow delays.

Delivery locations were full, so on-farm storage was his only option. But aeration fans blowing cool air could not dry that damp canola to a safe nine per cent moisture level. So Bown paid \$1,500 to \$1,800 each for propane-fueled heaters for three hopper bins.

Aeration fan makers offer natural gas, propane or electric heaters that bolt to the aeration fans. Bown's dad has an electric model, but Bown says that with more than one electric heater per yard, the power draw can start tripping breakers.

Bown's three bin-fan setups were each different. The first was a Meridian 4,000-bushel smooth-sided bin with five-hp centrifugal fan. On that bin he put a heater rated at 100,000 British thermal units (BTU). The second was a 15-foot diameter Goebel 3,000-bushel corrugated-steel hopper with three-hp axial fan. It got a 60,000-BTU heater. The third was an "ancient" — his word — corrugated hopper with a 19-foot diameter and 3,600-bushel capacity. For this one, Bown had the three-hp fan and 100,000-BTU heater on the ground with a heavy-duty flexible "sock" — he paid \$270 for a 12-footer of good quality — connecting them to the bin inlet. For all three, he used a soil temperature gauge shoved into the bin inlet to monitor incoming air temperature.

For all three setups, he had the heater between the fan and the bin. This fan-heater-bin sequence is recommended for canola. Grain Guard aeration engineer Imre Varro says the heater could go before or "upstream" of the fan when drying large-seeded grain such as corn and peas, which provide lots of room around the seeds for airflow.

"But with small-seeded and therefore high static pressure grains like canola, airflow into the bin can be so restricted that the fan can't suck heat away fast enough. So the flame in a high-BTU heater can stretch out enough to damage the fan," Varro says. That is why having the heater after the fan is better for canola.

It became obvious to Bown that the Goebel combo — the tall, narrow bin shape and smaller fan and heater — was "by far" the worst for drying, he says. "I had the bin nearly full and the fan was strug-

CONTINUED ON PAGE 32



A frozen gate had to be melted with heat from a tiger torch focused through an old stovepipe.



When the high-moisture canola that caused the gate to freeze shut was finally melted, it released what Bown called "canola juice" out the bottom of the bin.



Chad Bown says that at 33 cents per litre, drying last year's canola cost about six cents per bushel for propane, but related costs for equipment and electricity raised the total to about 50 cents per bushel.

**“And propane heaters for this kind of extreme moisture drying should be no less than 100,000 BTU for 3,000-bushel or bigger bins. The 60,000-BTU heaters just don't cut it.”**

*Chad Bown*

gling to push air through that amount of grain depth,” he says. “And propane heaters for this kind of extreme moisture drying should be no less than 100,000 BTU for 3,000-bushel or bigger bins. The 60,000-BTU heaters just don't cut it.”

## RECOMMENDATIONS

Taking some grain out of the Goebel bin would have helped, as Bown concluded later. Running bins less than right full is just one of Joy Agnew's recommendations when adding supplemental heat to an aeration system.

Agnew is a grain storage researcher with Prairie Agricultural Machinery Institute (PAMI) in Humboldt, Sask. Last fall, she put together these recommendations to improve results and reduce risk when using supplemental heat:

- Air entering the bin needs to be at least 10 C to have good drying potential.
- Air warmer than 10 C will dry grain faster, but in cold condi-

tions, don't heat incoming air above 20 C. “The reason for the maximum temperature increase,” Agnew says, “is to minimize the risk of condensation and freezing at the edge of the bin. With air in the grain more than 30 C warmer than the ambient air, this increases the chances of condensation and grain freezing to the edge of the bin.”

- Use a fan which provides airflow of at least 0.75 cubic feet per minute (cfm) per bushel when adding supplemental heat. While airflow of 0.1 to 0.2 cfm/bu. is adequate to cool a bin of canola, with added heat this low airflow rate could put grain at greater risk because it could take a week or more to push the drying front through a bin. With warm and very moist air creeping so slowly, spoilage could have enough time to start before the front moved on, Agnew says.
- Under-fill the bin and level the cone to improve airflow throughout.
- Ensure adequate ventilation at the top of the bin to allow moist air to escape.

- Turn the bulk frequently. Remove at least one third out the bottom and auger it back on top.
- Monitor diligently.

Like Agnew, Varro also recommends a minimum of 10 C air for drying. He adds that canola is safer if dried at a cooler temperature for longer rather than a high temperature for shorter. He also says to cool the grain quickly when drying is done.

Then he adds an important caveat. “These rules are not cast in stone and the experience will not be the same for everybody,” Varro says. “We find a lot of guys trying different things. Some have success doing things we don’t recommend and others have no success doing things we do recommend.” Thus, “monitor diligently” is an essential ongoing part of the process.

### BOWN’S EXPERIENCE

It was while drying his first bin — the Meridian — that Bown started to tweak the recommendations to suit his high moisture and cold air situation. He had it filled right to the top.

“The moisture front froze about halfway up due to low inlet temperature and too much canola in the bin,” he says. So he cranked up his high-powered heaters and warmed the cold air by 40 degrees — shooting 30 C air into the bin. Even at that, it took him 12 days to dry that first bin to below nine per cent moisture. “But if I didn’t do that, I would still be drying the canola two months later.”

Bown dried three more bins through December — one batch for each bin. He didn’t fill the bins right full this second time. He also turned off the fans and heaters on days below minus 10 C because “it was a losing battle at that point,” he says.

As recommended, he turned the bins fairly regularly — cycling out a 1,500-bushel semi-load every few days to get a moisture reading and check the condition. He re-binned each load into the top of the same bin. Cycling is especially important for the Meridian bin with the rocket aeration system. The rocket doesn’t dry the cone, he says, “so it’s imperative to cycle these type of bins.”

Cold conditions kept adding challenges throughout the ordeal. With all the moisture inside the bin, canola froze to the side walls, as Agnew suggests could happen. Bown estimates about 25 bushels stuck to the corrugated bin walls and 100 bushels stuck to the smooth wall. And he had a bit of panic when a truck came to pick up canola six days after drying ended and he couldn’t get the bin hatch open. It was frozen shut. A four-foot pry bar couldn’t budge it. So he used an old stove pipe to focus heat from a tiger torch. When it finally opened, the thawed canola above the hatch left a pool of melted “canola juice” on the ground, he says.

### HOPING NEXT TIME WILL BE DIFFERENT

Bown says one improvement for next time would be better ventilation. Neighbours in the same boat stuck hog barn ventilation fans on the top hatches to evacuate the moist air faster.

“When I crawled up the ladder to check the tops of my bins, it was basically a rainforest. I could actually see water vapour condense and run back down the bin walls,” he says. On the corrugated hoppers, so much moist air escaped through seams on the bin walls that ice and icicles formed all around the outside. “They looked like ice castles.”

Bown would also prefer centrifugal fans on all bins. “I will never buy another round axial fan for hopper bins,” he says. Upgraded heaters with more options — including temperature gauges, ther-

mostats and timers, and control settings that adjust to the ambient outside air temperature — would be a bonus. “As long as the whole package isn’t insanely expensive, I can see value in a fully loaded heater since it would reduce my babysitting time,” he says.

And, if he has the choice, he’ll dry only on days above freezing. This would limit icicles on the outside and grain frozen to inside walls, and hopefully bypass the frozen hatches.

### WAS IT WORTH IT?

Bown used 675 litres of propane per bin at an average of 33 cents per litre. It worked out to around six cents per bushel for propane.

But propane is just part of the overall cost. When adding electricity for fans plus equipment costs (augers, trucks, tractor and diesel) and his time, total drying costs were around 50 cents per bushel.

“In the end, I might have been further ahead just selling high-moisture grain and taking the loss — but that wasn’t really a choice we had,” Bown says. By the time he started combining, the elevators were all full.

“So we tried to make the best of a lot of bad situations. Everything worked out — all the dried canola went No. 1 — but it was a lot of extra work.” **CG**

Jay Whetter is communications manager with the Canola Council of Canada.

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# Detecting spoilage before it starts

An adaptation of cancer-screening technology offers a better and safer way to check for grain bin moisture, with a bonus of theft detection

BY RON FRIESEN

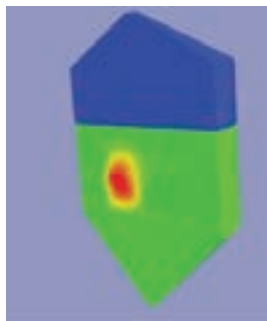
**A**n electromagnetic imaging technique originally designed to detect breast cancer tumours is now being adapted for a totally different use — locating spoiled grain in bins.

The research project at the University of Manitoba uses electromagnetic imaging (EMI) to create a 3D profile of a bin, showing pockets of moisture which can overheat and spoil.

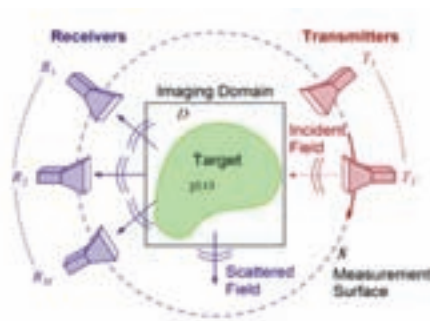
The system is the latest development for monitoring storage bins to detect potential spoiled grain, with the goal of helping farmers deal with the perennial problem of post-harvest spoilage losses, estimated to cost more than a billion dollars a year in Canada.

Developers call the 3D EMI system a step up from the current system of temperature-monitoring cables which measure heat levels at different locations inside grain bins.

Paul Card, CEO of 151 Research Inc., says the difference is that EMI is proactive. Sensor cables tell you when there's a problem in the bin, but EMI tells you before the problem starts.



The bin-detection system is an adaptation of technology originally developed to detect breast tumours.



Transmitters and receivers monitor the bin for high-moisture spots. If one is found, the system sends an alert to a computer or cellphone.

“Unlike a cable system, we’re detecting the pre-conditions to problems,” says Card, whose firm is partnering with the U of M in the project. “We can give an alert that we’re seeing something that may or may not turn into a problem, and we can give a rough probability of where we think this is going to happen and if something is going to happen or not, unlike a cable system where you’re already in trouble when you receive a detection.”

Card is working with Jitendra Paliwal and Joe LoVetri, U of M professors in the departments of biosystems and electrical and computer engineering.

The idea originated with a 3D microwave imaging system to detect cancer in human breast tissue, developed by LoVetri and his students. It works similarly to a CT scanner but at a much lower frequency.

Paliwal and LoVetri saw an opportunity for grain imaging, but knew it would have to be adapted because a grain bin is obviously very different from a human breast. PhD student Mohammed Asefi adapted the technology to grain imaging.

## GENERATING A 3D IMAGE

The team began experimenting by placing small amounts of spoiled grain together with healthy grain in an 80-tonne bin in the U of M’s grain storage research laboratory and checked if the technology could find them. Early results proved encouraging, so they continued testing.

Card explains that 24 antennae, acting as receivers and transmitters, are distributed around the inside walls of the bin. A sine wave (tone) is broadcast on one transceiver and received on the others to develop a 3D profile of the bin and its contents. Because grain’s ability to transmit electromagnetic radiation (called its dielectric property) depends on its moisture, it can be used to generate a moisture map like a 3D scan, much like a CT scan to detect tumours.

The information can then be relayed to a computer or cellphone so the producer can read the results without even having to go to the bin.

Card says the main advantage of the EMI system is that it gives a complete picture of what’s happening inside the bin. Sensor cables will indicate a rise in temperature but they won’t say if a hot spot is the size of a golf ball next to the sensor or the size of a beach ball four feet away. EMI pinpoints both the problem and its magnitude, so producers know exactly what they’re dealing with and where.

Another advantage is that the system can indicate exactly how much grain is in the bin. An unexpected drop in volume signals the possibility of grain theft.

Paliwal says there were some problems to overcome. One was the need to redesign the antennae to keep them from breaking during filling and unloading. LoVetri’s lab redesigned the antennae to withstand the forces caused by loading and unloading while still retaining the necessary electrical characteristics.



Jitendra Paliwal (left) adjusts the antennae on the 3D electromagnetic imaging system at the U of M's grain storage research laboratory while Paul Card (right) watches.

**“We can give a rough probability of where we think this is going to happen and if something is going to happen or not, unlike a cable system where you’re already in trouble when you receive a detection.”**

*Paul Card, 151 Research Inc.*

Paliwal sees a bright future for EMI in monitoring grain bins, especially as bins get larger and hold grain for much longer.

“When bins were smaller, it was easier to sample them,” Paliwal says. “You just opened the door and stuck your head in. But you can’t do that any more. That’s why monitoring grain has become extremely important. It cannot be done manually as we did in the past.”

The use of 3D imaging may not be restricted to farms either. Paliwal suggests the technology could also apply to railcars and ocean vessels — anywhere grain is moved in bulk and where maintaining quality is critical.

#### **PROTOTYPE TESTING THIS FALL**

The project is in its final stages of development. Paliwal and Card expect to install up

to a dozen prototypes in bins near Winnipeg this fall. A commercialized product is scheduled for release in time for the 2018 growing season. The cost will vary with the size of the bin, but Card and Paliwal expect their system will be competitive with cable monitors.

While acknowledging that the new technology isn’t cheap, Card says the cost has to be weighed against the value of the crop in the bin.

“If you spoil one bin, that would pay for instrumenting all your bins.”

Many steel bins exceed 20,000 bushels these days and the street price of canola earlier this year was above \$11 a bushel — do the math and you get Card’s point.

There’s another advantage to the system which often gets missed. That’s farm safety. Time was when you had to enter a grain

bin to check the condition of the contents. People have been known to get trapped in the grain and either suffocated or crushed. The 3D system avoids that danger because you do not have to enter the bin to check the condition of the grain. The system tells you remotely if grain is at risk.

Managing grain so it does not go out of condition is the best way to avoid accidents such as grain entrapment, says Glen Blahey, agricultural safety and health specialist with the Canadian Agricultural Safety Association.

“Out-of-condition grain is one of the predominant reasons why people go into the bin,” says Blahey. “If, during the unloading process, someone goes in to deal with a clog, bridged grain or grain stuck to the side wall, the grain can collapse, engulf them and fatalities have been known to occur.” **CG**

# Buy a combine, or stay with custom?

The decision depends on how much you lose to spoilage, so you need to think like a grocery store produce manager

BY GLEN MUMEY

**S**ue and Jim have increased their grain and oilseed operation to 4,500 acres. Until now they've hired a custom combine operator, but he's retiring. Originally they had hired him as a means of economizing investment, but now they are more financially secure. They already have swathing and hauling equipment, and wonder if they should buy another combine, but have not rejected the option of seeking a new custom operator.

For awhile in the past, Jim supplemented the family income by working in a grocery store in the winter. His job was mainly in the fresh produce section. While this activity might seem remote from a harvest equipment decision, Jim sees a connection. Dealing in produce involves buying fruits and vegetables and displaying them for sale. If the store can buy larger quantities it can get a better deal. But if it buys more than it can sell in a few days, it has to discard goods reaching the point of spoilage. The trick is to buy enough to get a discount but little enough to avoid spoilage.

The store also needs to factor in that spoilage increases with each additional day that inventory is held. It can then pick a sweet spot.

## CROPS ALSO SPOIL

What's the connection to farming? Crops left in the field may be affected by hail, wind, rain, snow, birds and who knows what else. Yes, this is spoilage. The longer a mature crop is left unharvested, the greater the chance of spoilage. So timeliness of harvesting affects inventory spoilage.

Timing of harvest can be controlled — at a cost. Maybe this takes the form of paying extra for a reliable custom operator. Maybe it means buying two combines instead of one. This is like declining the highest discount available in grocery store purchasing. You are going to pay extra to get your crop off more quickly.

The costs of buying or hiring combines can be calculated in a fairly straightforward manner. The other part of making the optimum combining decision involves knowing something about the exposure to spoilage.

If you could combine the whole crop on the day it matured, there would be no spoilage risk, but dream on if you think there is a custom operator ready to park a

fleet of combines in your yard waiting for you to decide if today is the day to harvest that 640 acres of barley. Or that you could afford to buy the number of combines needed to do it yourself.

## HOW MUCH CROP FOR HOW LONG?

Sue and Jim have given inventory more thought. First, they realized that their decision will affect their future. They have to think not of any one year but of what will likely happen on average in future. Then, they could think about what their average crop inventory would be without any combining. It would increase as the crop ripened and then remain the same.

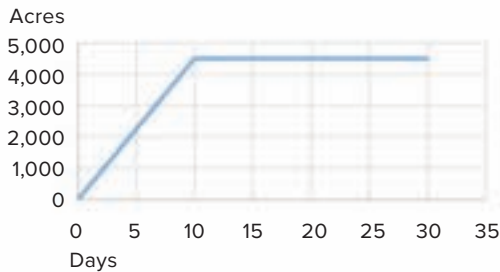
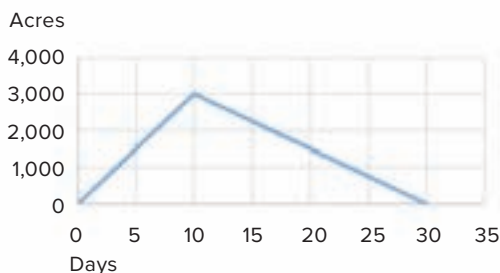
They estimated that the crop would all ripen within about 10 days. That would mean they would have an average of 450 acres of ripe crop the first day when the crops were ripening, 900 on the second day, and so on until at the end of 10 days, they would have all 4,500 acres ready for combining. Their inventory would then stay at that level if they had taken no action.

Next, they thought of how much crop inventory they would have if they started harvesting at the first opportunity. On the first day of harvest 450 acres would have ripened — if they could combine 150 acres a day, they would have 300 acres left unharvested after the first day. The remaining crop would keep maturing at this rate until all was ripened — in 10 days. By then, they would have combined 1,500 of their total 4,500 acres, with 3,000 lying unharvested.

From then on, at 150 acres per day, they would reduce the inventory to 2,850 acres on day 11, 2,700 on day 12, and continue until at day 30 (4,500 acres/150 acres per day) all would be in the bins.

Some graphs can illustrate this. Graph 1 shows how much crop they estimate will be out with no combining. Graph 2 shows how much will be in the field if they combine at 150 acres per day. From the second graph they can see that over the 30-day period their inventory ranges from zero to 3,000 acres. This leads to the conclusion that on average they expect to have 1,500 acres lying out for 30 days.

That's a start. They now have estimated how much crop will, on average, be exposed to the elements for how long.

**Graph 1: Crop out with no harvesting****Graph 2: Crop out, harvesting with one combine****THE COST OF WAITING**

Let's pause and look at the quality of our information. Do Sue and Jim know for sure how long, on average, it will take their crop to ripen? Can they go to some easy source and look this up? No, they will have to estimate the amount, based on their own experience and whatever consultation they may be able to do.

The same holds for the rate of combining. There are going to be some days with 20 hours of good combining conditions and some when it's raining all day or there is heavy dew until 2 p.m. They will have to make their best estimate, again based on their own experience and that of their neighbours, or any other sources of information they can find. Perhaps regrettably, that's the nature of planning — but would farming be very interesting if everything was predictable?

There is an even trickier estimation question: How much spoilage can they expect when grain lies unharvested? One thing we can be sure of — it's not trivial. A light shower on malting barley can cut its value by a third, and with a couple of big rains the windrows can look like lawns. Feed barley and wheat can sprout, too, and lose quantity and grade. Hail may strike at any time, with canola being super-sensitive. In some areas, snow may come early. If yields would have been poor anyway, crop insurance may cover the losses, but if yields are good, Sue and Jim may absorb all the spoilage.

**ONE APPROACH FOR CALCULATION**

In the absence of much locally relevant research information, if spoilage is important it must be estimated (guesstimated?). Here is one approach. Ask yourself how much loss you would have if grain laid out for a month. On malt barley, predict a write-off, on canola maybe a one or two per cent chance of late hail and perhaps a little allowance for wind and other things.

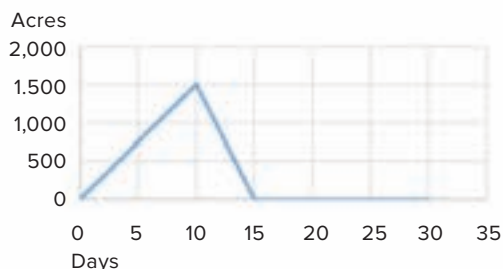
On other crops, the estimate would lie somewhere in between. My own guess, which I will transfer to Sue and Jim, is that in 30 days there would be a probable 30 per cent loss, or one per cent a day. They guess that crop insurance would cover a fourth of this, and to avoid exaggeration, they decide to settle on two-thirds of a per cent a day.

Now we can go back to our earlier example, with 4,500 acres ripening over 10 days and harvested at 150 acres a day. That left an average of 1,500 acres lying out for 30 days. That means, at 0.67 per cent spoilage per day, losing 20 per cent of 1,500 or 300 acres of crop. If Sue and Jim budget at \$400 per acre, that's definitely not trivial —  $\$400 \times 300 \text{ acres} = \$120,000$  in expected spoilage.

Is there anything that can be done to reduce this? Yes, reduce inventory. How can this be done? By increasing the harvesting rate.

For example, if one combine can harvest 150 acres a day, buying a second will increase that to 300 acres. At that rate, if crop is maturing at 450 acres a day, the combines will not keep up but will come much closer. At the end of the 10-day ripening window, there will be only 1,500 acres out, and this will be eaten up in another five days (see Graph 3).

With peak inventory at 1,500 acres, average inventory will be 750 acres and it will be lying out for 15 days. That average inventory, valued at \$400 per acre, is \$300,000. Losing value at 0.67 per cent per day for 15 days, the expected spoilage loss is 10 per cent  $\times$  \$300,000 = \$30,000.

**Graph 3, crop out, harvesting with two combines**

CONTINUED ON PAGE 38

### COMPARING THE OPTIONS

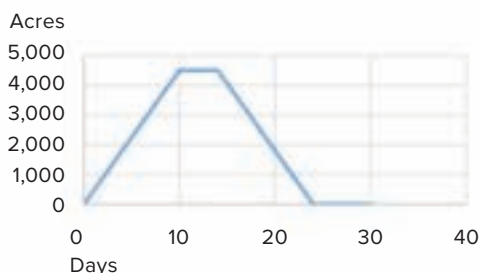
Dropping the spoilage loss from \$120,000 to \$30,000 means an estimated benefit from a second combine of \$90,000, due to spoilage control.

Using standard financial analysis, Jim and Sue calculate the cost of owning an extra combine at about \$70,000 per year. So, while a second combine can't be called a slam dunk, it looks positive, and they decide if they are going to go the ownership route, two combines would be better than one. But there's still the custom combining alternative. And that, too, will not be spoilage-free.

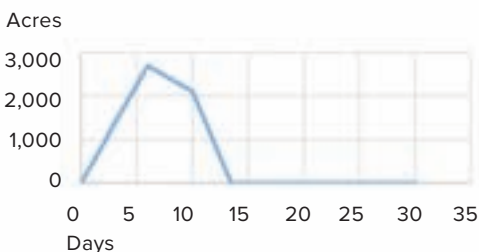
Sue and Jim have been in touch with two custom operators — let's call them A and B. A has three combines, but does some farming of his own. He is open about the fact that his own crop comes first. Operator A farms nearby, so his crop is likely to ripen about the same time as Sue and Jim's. Accordingly, they conclude that it will be at least a few days after all the crop is ripe before A will show up. They decide to make another graph describing A's harvest, with a 14-day delay and then steady work with three machines, to look at their crop inventory situation in the A case.

Both operators have good reputations, and Sue and Jim are confident they are truthful. One thing appealing about hiring A is that his price is \$28 per acre. Operator B is considerably more expensive at \$38, but B runs a custom-combining business, with four combines. He combines in the States, but he says that he expects to be back in Canada before harvest is underway. He wants to run his combines steadily, so he says he will come when about half the crop has ripened.

**Graph 4, crop out with custom operator A**



**Graph 5, crop out with custom operator B**



Sue and Jim call this a six-day delay. Graphs 4 and 5 show the crop lying out for the two custom operators, with A combining at 450 acres a day and B at 600.

It is apparent from the graphs that there is much more grain exposed to the weather with A than with B. It turns out that with A, on average over 2,625 acres are exposed for the 24 days from start of ripening until harvest is done. With B, the figures are 1,583 acres out for 13.5 days. Moneywise, this works out, again at a \$400 crop per acre and a 0.67 per cent daily spoilage rate, to \$168,000 in total spoilage for Operator A, with a per-acre value of \$37.33. For Operator B, total loss is \$57,000, or \$12.67 per acre.

The difference between A and B is \$111,000, or just under \$25 per acre.

The extra \$10 per acre that B is charging looks pretty small now, since his work should reduce spoilage by \$25 per acre. Between operators, B is preferred, by a comfortable margin.

At this point, the harvesting choice has been narrowed to either buy two combines, or hire the work done at \$38 per acre. Now Sue and Jim do some more figuring, and decide to allow \$10 per acre for fuel, labour and maintenance, if they combine themselves. Here is how their numbers add up:

| Do-it-yourself with two combines               |                  |
|--|------------------|
| Operating cost, 4,500 acres @ \$10             | \$45,000         |
| Annual ownership cost, two combines @ \$70,000 | \$140,000        |
| Inventory spoilage                             | \$30,000         |
| <b>TOTAL COST, DO-IT-YOURSELF</b>              | <b>\$215,000</b> |
| Hire custom operator                           |                  |
| Custom operator charge, 4,500 acres @ \$38     | \$171,000        |
| Inventory spoilage                             | \$57,000         |
| <b>TOTAL COST, CUSTOM OPERATOR</b>             | <b>\$228,000</b> |

It's a close call. Given the uncertainty in all the estimating, the difference is negligible. So the choice will probably come down to issues such as "how nice to have someone else worrying about maintenance" and "how reassuring to have full control of timing by running our own machines." But in the process of investigation, two alternatives, one combine and hiring the late-arrival custom operator, have been rejected. The basis of the rejection, in both cases, started with careful attempts to estimate inventory spoilage — grocery store economics. **CG**

**Glen Mumey** is professor emeritus at the University of Alberta who has taught and conducted research in agricultural finance.



## Glacier Media strengthens its weather, ag-technology team

CHATHAM, ON and CALGARY, AB – Glacier Media, a leading Canadian business information news, insights and data supplier, is pleased to announce that it has hired **Jonathan Neutens** as President of its Weather Innovations Consulting (WIN) group.

Neutens, who has more than 20 years experience in North America's agri-business sector, will lead the team at WIN to scale its business in the ag-technology space, building on the existing range of weather-driven products and services WIN currently offers its clients in North America, the United Kingdom and Europe.

"We're very pleased to attract someone of Jon's calibre to complement the great team at WIN," noted Glacier Media EVP Bill Whitelaw. "His hiring is key to our plan to scale the range of tools we offer to Canadian and global agriculture as part of the sector's shift to smarter and more data-driven solutions."

Neutens has held senior level executive roles at some of the leading companies in North American agriculture, including Nufarm and Syngenta, and served on the sector boards for CropLife Canada and CleanFarms Canada. He launched his career in their

family, market-leading ag-retail operation, and he has owned and operated his own enterprise software business. "Jon is bringing to us exactly the right blend of strategic and 'in-field' experience; he's plugged into some of the key shifts currently shaping Canada's agriculture sector and the role it plays globally," noted Whitelaw.

Neutens is a graduate of the University of Guelph with an undergraduate agri-business degree and holds a Masters of Business Administration degree from the Sauder School of Business at the University of British Columbia. "I am excited to join Weather Innovations and Glacier Media in this capacity. WIN's founder, Ian Nichols, has been quietly building and ground-proofing a suite of products and services for over 15 years... in this space currently coined 'decision' or 'smart-ag'. Many companies in this space have yet to get to this level of ground-proofing, and I am eager to grow WIN's presence and establish it as the leader it is in this sector shift in agriculture".

► For more information, please contact **Bill Whitelaw, Executive Vice President, Glacier Business Information.**  
**1-403-462-5108**

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**About WIN:** Weather INnovations Consulting LP (WIN) is a company originally developed at the Ridgetown Campus of the University of Guelph under the project name, Ontario Weather Network (OWN). The company specializes in building turnkey monitoring, forecasting, and data-modelling solutions for use across a number of agricultural crops, bringing the best and highest quality data and information into practice. Its vision is to make high quality weather-based modelling standard practice in farm level decision-agriculture, minimizing risk and maximizing return. WIN is experiencing rapid growth with customers in North America, the United Kingdom and Europe.

**About Glacier Media:** Glacier Media is a Canadian business information and media products company. It provides news, market information and sector-specific data within North America and internationally.

Glacier is headquartered in Vancouver. Its primary operations are in Canada as well as London, England. It is publicly traded on the Toronto Stock Exchange under GVC. The company provides news, data and analysis in a range of business sectors. These sectors include: Agriculture, Energy, Mining, Real Estate and Environmental Risk. Glacier also owns community newspapers and websites in British Columbia, Alberta and Saskatchewan.

# UAVs and crop scouting. Are they worth it?

Seven organizations supported a two-year study on whether drones can provide practical benefits to farmers

**W**hen Chris Neeser began to design a research project on the use of unmanned aerial vehicles (UAVs) in crop scouting, he wondered if anyone would be willing to fund it.

"This was different from a typical research project," says Neeser, a research scientist with Alberta Agriculture and Forestry's Crop Diversification Centre, South, in Brooks. "There was no hypothesis to test, no new production method or product to look at." It was, as he says, a straight-up assessment of UAV technology and its application on the farm.

He needn't have worried. The questions he wanted to ask about UAVs — what they can and cannot do, and their cost/benefit as a scouting tool — were questions a lot of other people wanted answered, too.

In the end, seven organizations came to the table to fund Neeser's two-year study. Tellingly, all of them, including Western Grains Research Foundation, are grower-funded groups — an indication of how strongly UAV technology has captured imaginations and desire to see their on-farm potential realized.

**"We need to see weeds when they're tiny, and that just doesn't show up."**

*Chris Neeser*

## GETTING PAST THE MARKETING HYPE

What prompted Neeser to do this research in the first place was the increased marketing of UAVs to growers as the "must-have" new farm tool. "The offering at the time was these NDVI maps and what they could show happening in fields," he says.

At its simplest, normalized difference vegetation index (NDVI) maps show whether or not a target area contains green vegetation (NDVI maps have been generated by satellite for decades). This marketing suggested that UAVs could generate these maps quickly and easily, allowing growers to get a bird's-eye view of their fields to identify areas that need attention and take quick action.

What Neeser and his team found, however, was a process a bit more complicated than that. The UAV itself (its ability to stay on course at an even speed, even in windy conditions), the flight control system, camera quality and capability and, finally, the software and technical ability

to process collected imagery and collate it into some kind of readable, high-resolution image within a reasonable time frame were all factors in the efficacy and usefulness of using a UAV to scout for weeds and disease.

Neeser and his team decided to measure three specific aspects of UAV technology: its usefulness for early weed scouting, for disease scouting, and its cost.

They used a fixed-wing UAV and captured images three times during the season in six crops (two fields each of barley, canola, field peas, seed alfalfa, potatoes and spring wheat). The first flights, conducted in late May and early June, were focused on weed scouting, while the second two flights (late July and mid-August to early September) assessed the ability to spot crop disease with UAVs.

## MIXED RESULTS AND LOTS OF POTENTIAL

So what did they find? "As far as weeds go, the problem is a lack of image resolution. We don't have enough resolution to detect them," says Neeser. "We need to see weeds when they're tiny, and that just doesn't show up."

He explains that NDVI maps are essentially a collection of pixels. In this study, UAV images were taken at 180 metres above the ground with a modified Canon PowerShot SX260 HS camera, with the result that each on-screen pixel represented a 6 x 6-centimetre area of that ground.

That might sound like a pretty good close-up, but at that range, and the ability to identify which pixels are crop and which are weeds is a challenge. Identifying individual weed seedlings and even weed species was impossible.

Still, he sees potential for this technology to develop weed-density maps by using an algorithm that removes the pixels representing crop rows so that any remaining pixels showing green indicate weeds. It's an onerous process, though.

"Bottom line, we have the parts to build a system that would do this," he says. "But how useful is a weed-density map just now? At this point, not so much, because we also need sprayers that can use those maps." He adds that such sprayers exist, but the technology is still in its infancy.

On the disease scouting side, Neeser sees some more immediate application. "With crop diseases, we have enough resolution to see it's there, but it can't tell us what the disease is."

Crop disease tends to create patches that are highly



Chris Neeser used a fixed-wing UAV and captured images three times during the season in two fields each of barley, canola, field peas, seed alfalfa, potatoes and spring wheat. PHOTO: JAN ZALUD, JZAERIAL

visible in the crop canopy from a height. Neeser thinks farmers could use those images to guide boots-on-the-ground physical inspections and treatment. One symptom of clubroot in canola, for example, is patches with a thin canopy. Flying a drone over a canola fields could reveal patches when they are still small and therefore difficult to detect by other means.

"The imagery would allow you to see small spots, gaps in the crop canopy, some of them small enough that you wouldn't necessarily see them by walking the field," Neeser explains. "You wouldn't know what the disease was from the images, but you'd know where to look and where to test in the field." You might even find that the patch was not caused by disease at all, which is still valuable to know.

It's a more efficient way to scout for soil-borne disease that occurs in patches, he says, and it does offer growers a better chance of finding problem areas that warrant further investigation. "It's a totally new approach to managing disease in specific areas."

#### WORTH THE EXPENSE?

And what about the third aspect of the study? Given its current limitations, is UAV technology worth the expense? Well, yes and no.

Neeser is the first to admit that UAVs, including all the software and image-making support they require, are constantly evolving and getting cheaper. Even so, the cost and the extra layer of technical expertise they add is mostly being borne by independent crop advisers who, he says, increasingly see adding UAVs to their arsenal as a necessary cost of doing business and staying competitive.

He thinks UAVs can complement the other high-tech crop surveillance tool: satellite imagery (which is where NDVI mapping began). Satellite imagery is better and faster than it once was, and is far less expensive to use. "No way can a drone compete with a satellite on cost," he says. But they can help each other. "Satellites will do the field mapping and pick out patterns within fields, and UAVs will assist with the close up inspection."

Having said that, UAVs are in their infancy when it comes to farm work, and Neeser is keen to see what the future holds. "Right now, UAVs are a great ad hoc crop inspection tool," he says. "They provide information that's useful and immediately actionable [in terms of further scouting], but not written down anywhere.

"It's like where computers were in the '80s," he says, recalling the hesitancy, curiosity and finally warm embrace of computers as an integral farm business tool.

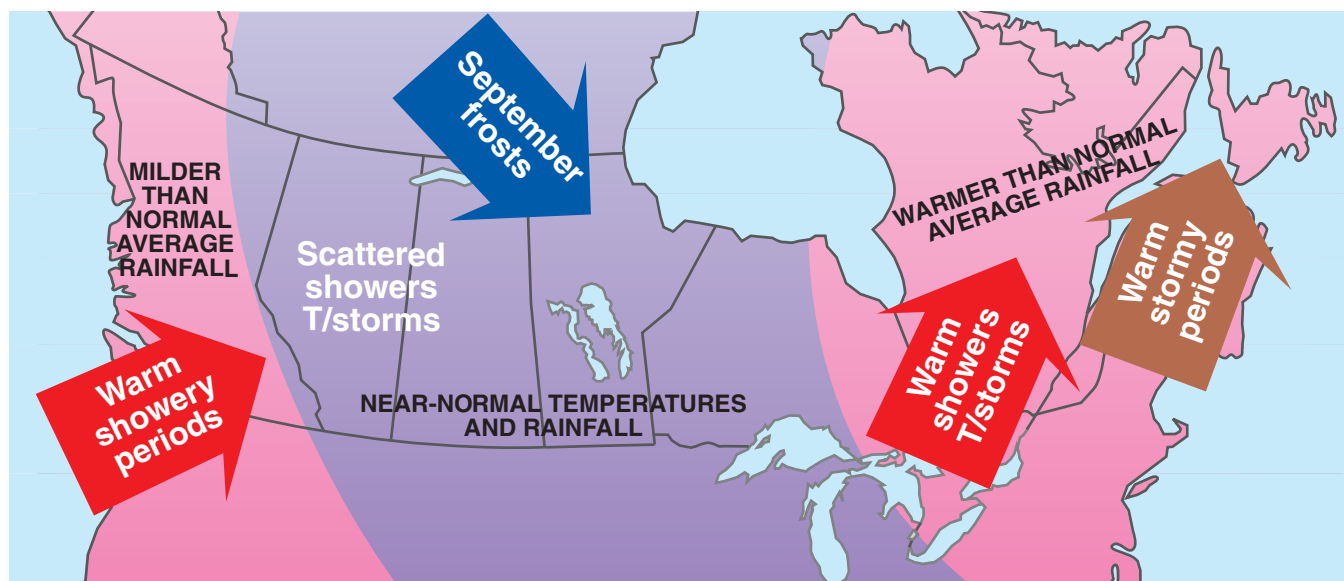
"There's a sense that's where we're at with UAVs just now," Neeser says. "A lot of farmers are buying these things because they're intrigued by them; then they find applications for them." **CG**

WGRF is a farmer-funded and directed non-profit organization investing in agricultural research that benefits producers in Western Canada. For over 30 years the WGRF board has given producers a voice in agricultural research funding decisions. WGRF manages an Endowment Fund and the wheat and barley variety development checkoff funds, investing over \$14 million annually into variety development and field crop research. WGRF brings the research spending power of all farmers in Western Canada together, maximizing the returns they see from crop research.

Chris Neeser's UAV research was funded by:

- Alberta Crop Industry Development Fund
- Alberta Canola Producers Commission
- Alberta Pulse
- Alberta Alfalfa Seed Commission
- Alberta Wheat Commission
- Potato Growers of Alberta
- Western Grains Research Foundation

NEAR NORMAL Milder than normal



## British Columbia

- **Aug. 6-12:** Hot, dry in the Interior with sporadic thundershowers. Sunny elsewhere with scattered shower activity.
- **Aug. 13-19:** Warm overall apart from a couple of cooler nights. Mainly sunny with isolated showers or thundershowers.
- **Aug. 20-26:** Generally settled and sunny with seasonable to warm temperatures. Showers or thundershowers at a few localities.
- **Aug. 27-Sept. 2:** Frost patches at a few northern locations and higher levels. Fair except for some rain on one or two occasions.
- **Sept. 3-9:** Warm with a couple of cooler nights with overnight frost in mountainous regions. Scattered rain on a couple of days.
- **Sept. 10-16:** Rain occurs on a couple of days this week, chance heavy in places. Blustery, seasonable to cooler.

## Alberta

- **Aug. 6-12:** Warm to occasionally hot under considerable sunshine. Scattered thunderstorm activity on a couple of days.
- **Aug. 13-19:** Warm apart from a couple of cooler nights. Scattered showers or thunderstorms, some locally heavy.
- **Aug. 20-26:** Temperatures dip to near zero at a few higher levels, otherwise seasonable to warm. Sunny with passing thunderstorms.
- **Aug. 27-Sept. 2:** Cooler. A frost risk on one or two nights. Otherwise sunny with scattered showers or thunderstorms.
- **Sept. 3-9:** Variable as sunshine alternates with some rain. Temperatures are seasonable to cooler with frost pockets. Blustery.
- **Sept. 10-16:** Nighttime frost in many regions, otherwise seasonable temperatures. Sunny aside from rain on two or three occasions.

## Saskatchewan

- **Aug. 6-12:** Mostly sunny skies dominate with seasonable to above normal temperatures. Scattered thunderstorm activity.
- **Aug. 13-19:** Passing thunderstorms bring a chance of heavier rain, otherwise look for sunny skies and seasonable to warm temperatures.
- **Aug. 20-26:** Seasonable to warm aside from cooler nights. Sunny but showers or thunderstorms on a couple of days. Blustery.
- **Aug. 27-Sept. 2:** Sunny aside from scattered shower or thunderstorm activity. Temperatures dip to zero on a couple of nights.
- **Sept. 3-9:** Frost threat south, more definite central and north. Fair skies interchange with some rain. Blustery.
- **Sept. 10-16:** Changeable as sunshine alternates with rain. Temperatures vary with frost likely on two or three nights. Gusty winds.

## Manitoba

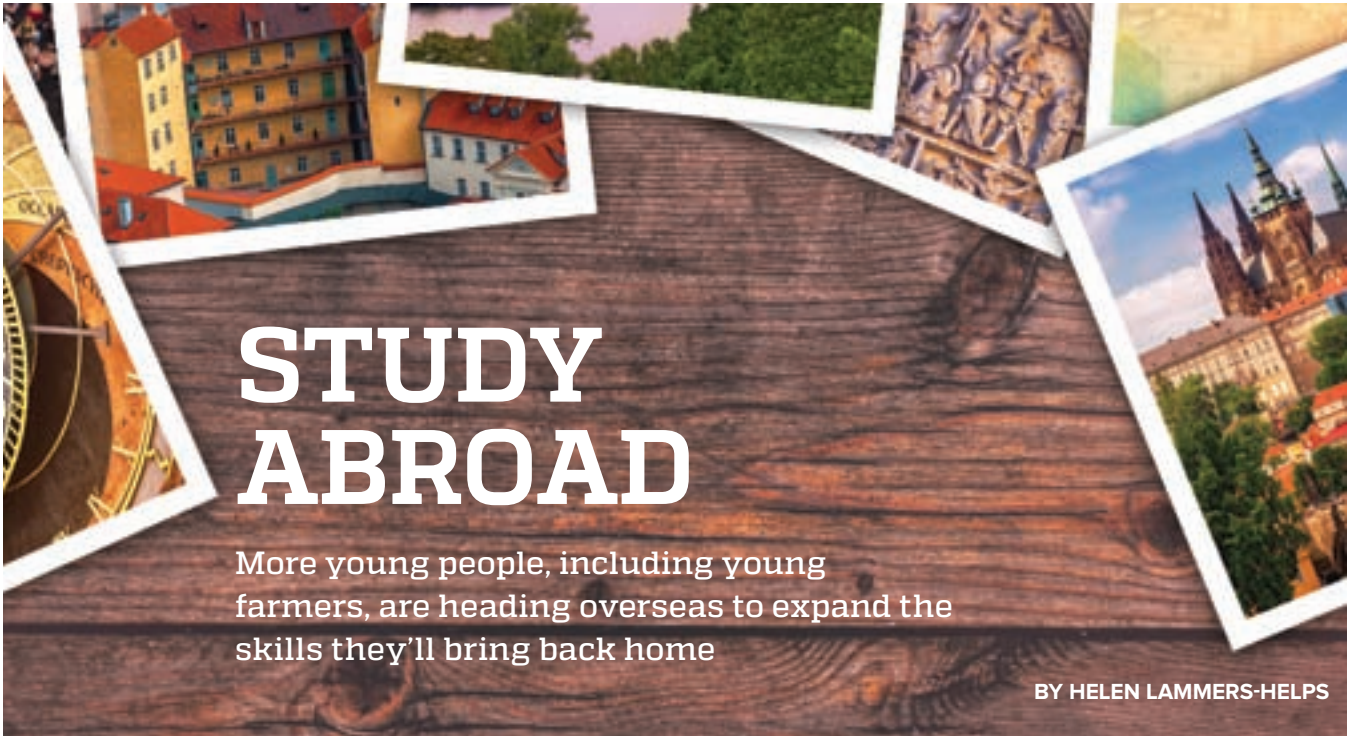
- **Aug. 6-12:** Seasonable to warm and mainly sunny. Scattered thunderstorms on a couple of humid days, risk heavy in a few localities.
- **Aug. 13-19:** Passing thunderstorms, chance heavy in spots. Otherwise sunny with seasonable to warm temperatures.
- **Aug. 20-26:** Highs often in the 20s with some cooler nights. Sunny aside from showers or thunderstorms on a couple of days.
- **Aug. 27-Sept. 2:** A few lows drop to near zero in the south with frost patches central and north. Mostly sunny. Scattered thunderstorm activity.
- **Sept. 3-9:** Pleasant and sunny on most days. Some rain on one or two occasions. Cool nights. Frost hits a few areas. Blustery.
- **Sept. 10-16:** Temperatures fluctuate with brisk winds. Frost in most regions on a couple of nights. Sunshine interchanges with rain.

## National highlights

**August 6 to September 16, 2017**

Warm weather is expected to linger over western and eastern portions of Canada well into September, although periodic cool spells over the Prairies and Northwest Ontario will bring overall readings closer in to line with normal values. Typical summertime showers and thunder showers will make their appearance throughout the country with average rainfall amounts anticipated in all regions. Remember that some larger thunderstorms will have the potential to produce locally heavy rain, hail and strong winds. In Atlantic Canada, a fairly active tropical storm and hurricane season is likely this year. As a result, the Maritimes and Newfoundland could experience a couple of adverse weather events in August and September.

Prepared by meteorologist Larry Romaniuk of Weatherite Services. Forecasts should be 80 per cent accurate for your area; expect variations by a day or two due to changeable speed of weather systems.



# STUDY ABROAD

More young people, including young farmers, are heading overseas to expand the skills they'll bring back home

BY HELEN LAMMERS-HELPS

**O**f all the ways a person can prepare for a career, spending time far from the classroom and away from familiar surroundings may actually have the most impact.

Lisa Blenkinsop, manager of the Studies Abroad program at the University of Guelph, hears this feedback over and over again from students who have spent time studying abroad. They tell her how the trip changed them personally, resulting in extra self-confidence, independence, maturity, empathy and more.

The experience and personal growth gained from studying abroad can really set students apart in the employment world, says Blenkinsop. That includes the farm world too.

"Many of the traits that employers are looking for are found in students who have studied abroad," she says. These include curiosity, intercultural competence, interest in diverse working environments, second languages, problem-solving skills, and cross-cultural communication skills, plus enhanced abilities to tolerate ambiguity, take risks and work independently.

Meredith Blumthal, director of International Programs in Engineering at the University of Illinois, agrees. Experience gained from studying abroad translates directly into competencies that are valued in the workplace, she says. These include skills such as critical thinking, problem solving, communication, teamwork and leadership.

For instance, navigating in a foreign land, especially in a place where you don't speak the language, requires critical thinking and problem solving, says Blumthal. "You have to find other ways to communicate."

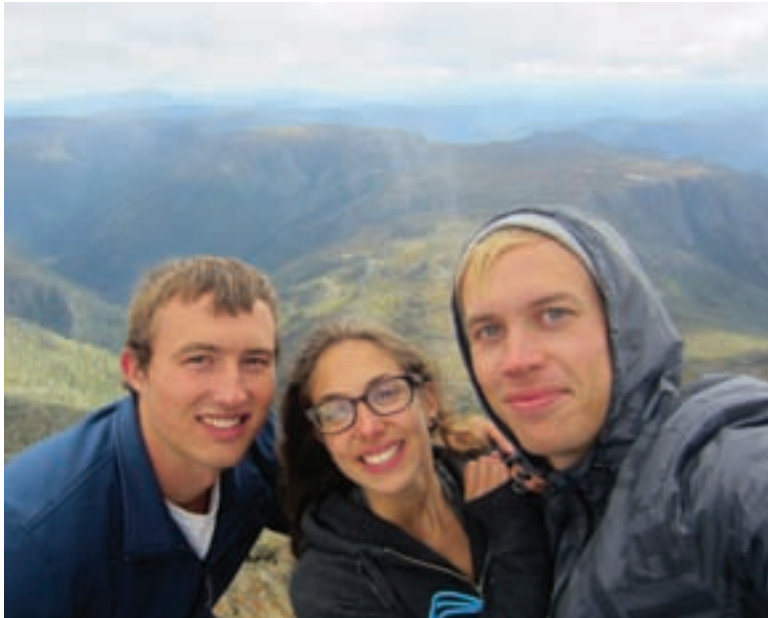
Travelling or studying abroad can boost your global outlook, a necessity given the importance of international trade and our diverse populations today, says Blumthal. In this way, a manager might be a better mentor and be better able to work with different perspectives if they have had previous intercultural experiences.

Just the logistics of foreign travel can help people learn to cope with ambiguity and uncertainty, a big plus no matter where you work, adds Jean Drasgow, director of ACES Career Services, also at the University of Illinois. On a daily basis, you are faced with questions such as, "Is my plane going to land on time so I can catch my connecting flight? What do I do if the rail engineers are on strike? What product can I buy in this country that will work for me?"

Those who have lived abroad also tend to have an expanded world view which can pay dividends in the workplace, says Blumthal. For instance, having experience working with others from diverse backgrounds and seeing how other farms approach the same challenges can help you think of more innovative solutions to your own farming contexts, she explains.

Creating lifelong friends and a network that spans the globe is another benefit of student exchanges. For Andria Karstens, who spent a term abroad in Perth, Australia, while in the agri-business program at the University of Saskatchewan, the international contacts and connections she developed are among the things she treasures

CONTINUED ON PAGE 44



**“You meet people from all over the world, so you have to learn to work with others,” says Andria Karstens. “The more you do this, the better you get at it.”**

most from her trip. “You meet people from all over the world, so you have to learn to work with others. The more you do this, the better you get at it,” she says.

While such testimonials are plentiful, it turns out their claims are also backed up by research. Two decades ago, U.S. sociologist Jack Mezirow developed the theory of transformative learning. In simple terms, transformative learning takes place when an individual changes their frame of reference by critically reflecting on their assumptions and beliefs and by developing new ways of thinking about their world.

The benefit of transformative learning is that it helps a person to better adapt to change, explains Blumthal. Being able to handle feeling uncomfortable and being able to adapt in uncertain times are skills that both colleagues and superiors value, she says.

Being out of your element is a good way to speed up the transformative learning process, continues Blumthal.

Drasgow agrees. “I like to think of study abroad as transformative learning at warp speed,” she says.

University programs aren’t the only way to enjoy the benefits of study abroad. Graham Johnston who operates

## Get the most from a study abroad experience

1. Live like a local, not a tourist. Do what the locals do. Shop at the local market and cook with local ingredients. Learn the language and customs.
2. Don’t be afraid to live with a host family. This will give insight into the culture.
3. Don’t always travel to other areas every weekend. Try to immerse yourself in the local culture.
4. Go for the experience, not the selfies. Live the experiences you encounter. Stop thinking how you’ll make them into social media “likes.”
5. Keep a blog or journal to document your journey so that you can look back on the experience and share it with others.
6. Self-reflect. Think about your intercultural experiences, especially those that made you feel uncomfortable or out of your comfort zone. This will give you a chance to learn more about yourself, and the chance to process your experience.
7. Connect with home, friends and family, but don’t overdo it. Study abroad is a great opportunity to be more independent.

a dairy farm with his family near New Dundee, Ont., has high praise for the experience he gained while participating in a Junior Farmers Exchange to Australia and New Zealand. He says travelling gave him the opportunity to experience new perspectives, to see how agriculture has adapted to different landscapes, and to see various approaches for dealing with farm issues. "Seeing how people handle situations differently from what you are used to is a great reminder to keep an open mind and think outside the box on your own operation at home," he says

It isn't necessary to participate in a formal exchange to get the benefits of travel. Ian Mayberry who owns and operates a dairy goat farm with his wife Vicki near Ingersoll, Ont., says his time working in Saskatchewan and New Zealand (where he met Vicki) was irreplaceable.

"Our ability to manage stems from all of our life experiences," Mayberry says. "The more you open yourself up to new experiences, and the greater the diversity of those experiences, the more receptive you are to trying new things and new technologies, to exploring new ideas."

And when experiencing the inevitable bumps in the road that come with life, Mayberry says his travels help him to put things in perspective. "I have seen worse with my own eyes." **CG**

## Study abroad opportunities

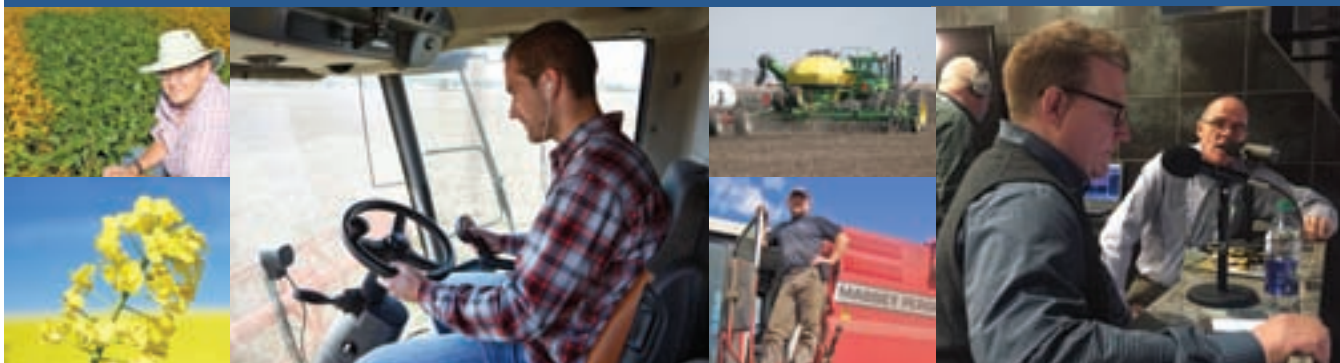
Opportunities to study abroad come in many forms. For instance, the University of Guelph's Centre for International Programs (which is celebrating its 50th anniversary this year), offers three different types of opportunities. In the oldest of the university's study abroad programs, students attend an international university which has a formal agreement in place with the University of Guelph. Students take courses on exchange at the partner university and the credits are transferred back to Guelph when they return. The University of Guelph has 100 exchange partners around the world.

In the second type of program offered by the University of Guelph, a professor acts as a facilitator for semester-long group programs located in India, Shanghai, Krakow, London, Paris and Latin America.

The latest addition to the study abroad offerings are summer field schools. These programs are three to six weeks long and are co-ordinated by a University of Guelph professor.

About eight per cent of Guelph students take advantage of a study abroad opportunity while pursuing an undergraduate degree, says Lisa Blenkinsop, manager of the studies abroad program at the University of Guelph.

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# Where are the women?

The research is incontrovertible. Diversity creates strength. So why aren't we making greater strides at getting farm women involved?

BY MAGGIE VAN CAMP / CG SENIOR BUSINESS EDITOR



I'm one of a dozen women sitting around a long boardroom table. The surroundings are completely unfamiliar and slightly intimidating. We politely watch a video and quietly chat with one another about our farms, succession, our families and, of course, the weather.

The woman across from me taps tentatively on the little microphone that seems to pop magically out of the board table in front of each seat, and then looks around hoping the mics aren't on. Another quickly jumps up and tidies the plates after lunch. The lady beside me gently puts her arm around the grandson she has brought along (she's providing daycare for her daughter today) and a younger woman involved in organic production sits confidently unaware in the chairman's spot.

The Chicken Farmers of Ontario has invited this group of women to network and to tour the head office as a way to encourage more females to step up to board positions. It's part of the group's ongoing strategic plan to increase the diversity of its governing body.

Having more females on the board would better represent the CFO's membership that is close to 50:50 male and female, says CFO chairman Ed Benjamins. However, over the years this board, like most commodity boards, has only had a few females involved on a district level, and never any female directors sitting around the board table. "We need to bring some diversity and different thinking and different perspectives on leadership to

our board," says Benjamins, who grows broilers and crops near Moorefield, Ont.

To encourage this shift, the CFO has hosted meetings, invited special female leadership speakers to the AGM, and pushed the mandate on social media. Benjamins says they are still at the planting stage and hopes these efforts will result in a future harvest with a top-quality, more diversified talent base for the CFO board. There are signs of success already. This spring two female farmers were selected to represent districts.

The CFO's push is part of a larger trend toward increasing diversity on business and organization boards. It's a trend that goes way beyond agriculture.

The Canadian Board Diversity Council's 2016 Report Card revealed that women today hold 21.6 per cent of FP500 (*Financial Post's* list of the top 500 companies by revenue) organization board seats, up from 19.5 per cent in 2015.

To stimulate this upward trend, the CBDC put together a list of 50 women who are qualified to fill board positions, and it offered board training for females.

Numerous studies have linked boardroom diversity with better financial performance, governance and innovation. Benjamins agrees: "We are trying to attract the best people by broadening our base," he says. "To include women is the right and smart thing to be doing."

In spite of recent efforts, agriculture is still lagging behind, even at the large supply company level. The CBDC's report showed

companies in our sector are dead last in diversity. The top publicly traded companies in agriculture, forestry, fishing and hunting have only 12.8 per cent females on their boards.

However, building a more diverse board membership takes time, with concerted effort and a shift in thinking by everyone. This is especially challenging for farm boards when the number of farmers has been steadily declining for decades and the boards are still dominated by the baby boomer farmers who are mostly men.

The effect on board gender diversity is amplified because networks tend to pull and develop leaders that they know, (in other words, who are like themselves). The CBDC reported that nine in 10 directors rely on their personal networks of other senior male executives to fill board vacancies, rather than investing in a thorough recruiting effort.

Getting anyone of any gender or background to step up to leadership roles on farm boards can be difficult, but there's also a bigger barrier if there are few role models. "You can't aspire to be something you cannot see," says Jen Christie who is event chair for the Global 4-H Network Summit and previously was a manager for John Deere.

To make it even more challenging, it's been shown that it takes three women on a board for a woman to have any impact and not just be a token position. If that happens, retention becomes a problem. "People are more likely to stay in organizations that have

people that look like them,” said Christie, who titled her recent presentation to a Canadian Association of Farm Advisors meeting in Woodstock, “Can I talk to the Woman in Charge.”

Christie notes the number of women involved in the agricultural industry has been steadily increasing, with more than 60 per cent of graduates from the University of Guelph’s agriculture programs for the last decade.

This increase in young women engaged in the industry is mirrored in the Ag Women’s Network, an online group that Christie helped create and chairs, which has ballooned to over 1,700 members in just a few years.

The statistics are showing a much slower rate of change (see graphic). In 2016, the ag census recorded 28.7 per cent, or 77,970 female farmers in Canada, while in the U.S. close to a million female farmers were counted in 2012. Partly the slow pace

of change is due to continued consolidation. Canadian farm numbers shrank six per cent in the last five years to less than 194,000, about the same population as Kelowna, B.C.

The spread in scale and the decreasing number of farms is being driven by technology and economics. Fewer farmers are producing more and more. Using the 10:90 rule of thumb, that’s less than 20,000 farms producing 90 per cent of our food and fuel, says Rene Van Acker, dean of OAC.

Van Acker is already seeing a drop in the amount of farm-raised talent going through OAC programs — at the same time that the demand for farm-raised graduates is increasing. This is a problem at the very root of our future, and it requires the industry to become more diverse, including gender.

“So much of what we do and where we want to go is about people capacity,” says Van Acker. “Diversity is a sign of a robust and healthy sector.” **CG**

The proportion of female farmers edged up only to

**28.7%**

in 2016 from  
**27.4 %** in 2011.

This continues the slow long-term trend since 1991 when they accounted for

**25.7%**  
of farm operators.

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# Turning friends into targets

Be glad you aren't the CEO of a major machinery manufacturer in the new era of Donald Trump

BY SCOTT GARVEY, CG MACHINERY EDITOR

**E**ver since Donald Trump sold 62 million American voters on the idea that, by applying border taxes, he could recreate a manufacturing landscape last seen in the 1950s, there have been sweat stains on the collars of manufacturing executives everywhere. Now, more of those executives within the U.S. are speaking out about what they think of that idea.

When it looked like implementation of such a tax was imminent, just a few months ago, John Deere's CEO Samuel Allen appeared on CNBC to voice his objection.

"I think, without a doubt, any form of protectionism or nationalism, on the whole, is not beneficial for any global company like ours," Allen said.

The recoil had started soon after the election, and then continued to build. By the Detroit International Auto Show in January, when Trump had turned his Twitter rage on the auto sector and was promising a tariff in the order of 30 per cent, Fiat Chrysler CEO Sergio Marchionni voiced his unease at the the uncertainty Trump was creating.

"We need clarity," Marchionni said. "It's put everything back on the back burner for the time being."

What the automotive and farm machinery industries want is confidence and a dependable global trade environment, he said. But that assurance hasn't come.

Yet even with those and other extraordinarily public comments from CEOs, a decision to tear up NAFTA (instead of renegotiating it) was apparently only averted by last minute phone calls from our prime minister and from the president of Mexico.

Plus, the U.S. has already pulled out of the TPP and U.S.-Europe trade deal negotiations.

All manufacturing sectors, including farm equipment, depend on a global supply chain to build components in the most cost-effective and efficient way possible.

"Undoing globalization is like taking a wrecking ball to a building," said Peter Hall, vice-president and chief economist at Export Development Canada, during a presentation to Manitoba exporters in May. "The ball swings one way, then it swings right back. It's going to bounce through that neighbourhood and take all the buildings out."

"When you talk about tearing up NAFTA, that's like putting a 3.5 to 4 per cent tariff on everything you ship south of the border," Hall said. "That's not very much

when you consider what's being discussed in terms of a border adjustment tax. We're talking somewhere between 10 and 20 per cent. Can you imagine the carnage that happens with something like that?"

He answered his own question: "A 10 per cent border tax drops GDP by four per cent. That's more than double the growth we got last year. So you can see a picture of that pushing us into a very complicated recession. Jack that up to the publicly discussed 20 per cent, and it's more than double that. That's more in the Great Depression territory."

At the G7 Summit in Sicily in late May, the U.S. president was widely seen as a destabilizing influence, unwilling to support the overall vision and objectives of the other leaders.

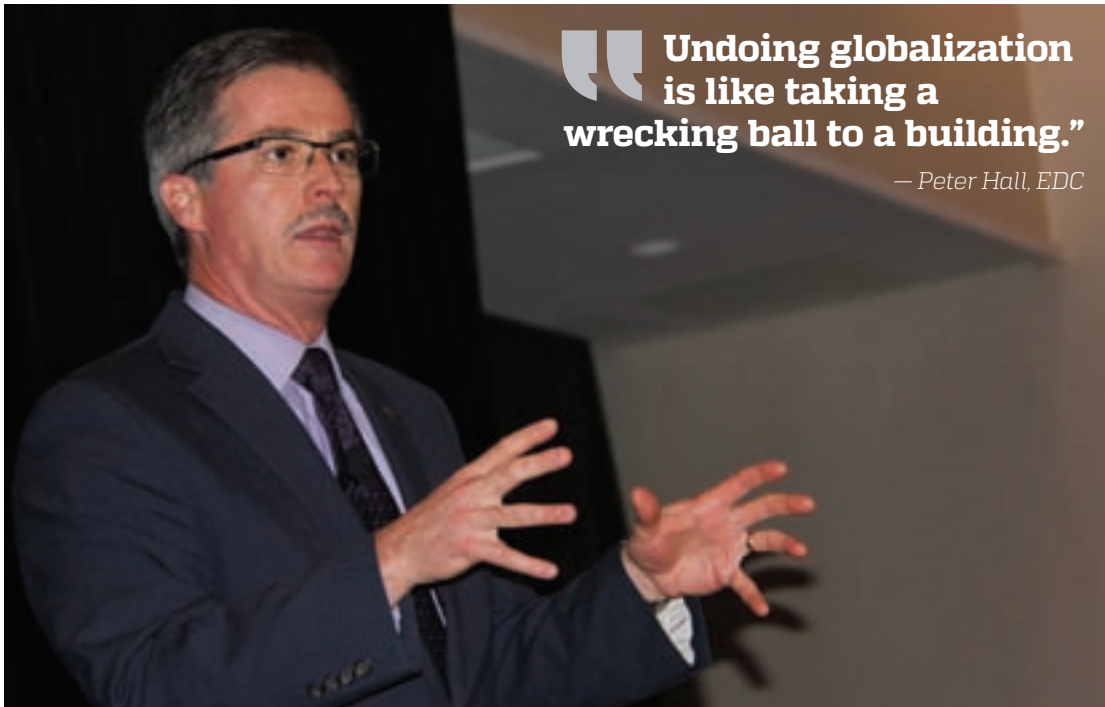
Angela Merkel's speech, given shortly after the G7 meeting concluded, suggests she sees a difficult relationship ahead between her country and the U.S. The U.K.'s *Independent* newspaper quoted her as saying, "The times in which we can fully count on others are somewhat over, as I have experienced in the past few days."

Chrystia Freeland, our own foreign affairs minister, echoed that sentiment in a speech to Parliament in June. But this time the reference to the U.S. was explicit and not implied.

The policy statement issued after the conclusion of the May G7 meeting was unusually short. And the wording on the subject of international trade was pretty bland. Although the group committed to "keep our markets open and to fight protectionism," the second part of that sentence "while standing firm against all unfair trade practices," seems to offer the U.S. administration an easy out should it decide to implement border tariffs.

Germany's *der Spiegel* magazine reported that during a meeting with EU leaders in Brussels Trump declared, "The Germans are bad, very bad (when it comes to trade). See the millions of cars they are selling to the U.S.... Terrible. We will stop this."

What the president overlooked — or doesn't know — is that German carmakers, like many global brands in the ag equipment sector such as Kubota, have made significant manufacturing investments inside the U.S. The BMW plant in South Carolina, the firm's largest, builds cars for the domestic market as well as for export, as does Kubota's. That "standing firm against all unfair trade practices" (real or imagined) proviso seems to be



“Undoing globalization is like taking a wrecking ball to a building.”

— Peter Hall, EDC

Peter Hall, vice-president and chief economist at Export Development Canada, discussed global trade with a group of exporters in Winnipeg in May.

PHOTO: SCOTT GARVEY

perfectly suited to apply tariffs to German automobiles — or anything else.

AEM, the association that represents U.S. ag equipment brands, wants its members' voices to be heard as the start date for NAFTA renegotiations draws nearer. It has put out a call to its member companies encouraging them to provide comments, which it will submit to the U.S. Trade Representative during the upcoming consultation period. That reflects how important trade relationships are to its membership.

That isn't surprising to Hall, who believes strong opposition from all U.S. industry leaders will ultimately prevent new border tariffs from being imposed.

“The right question is, how is all of this going to affect America?” he said at that Manitoba presentation. “Nobody (in the U.S.) is going to listen if Canada or Mexico squeaks. But regular Americans will listen if they understand what these measures will do to them.”

That, more than anything, will likely determine how far the Trump administration tries to go in disrupting today's pattern of globalized trade. But if the comments I heard from some Americans on a trip to the Midwest in May are any indication, more than a few believe the world outside the U.S. is the way Trump says it is.

For example, I was told by my cabbie en route to the Moline, Illinois airport it was only because of taxpayer funding syphoned out of the U.S. that countries like Canada get to afford state-funded health care. She wasn't alone in expressing the view that the U.S. is constantly being cheated and played for a sucker by the rest of the world.

In fairness, however, I spoke with at least as many Americans who were disgusted with the actions of the

president. But with strong ideological support from much of the Republican base that still buys into his rhetoric, broad border adjustment taxes remain a risk, even though Americans stand to lose as much as anyone if they're imposed.

“By America's own calculations, direct and indirect jobs that depend on trade with Mexico amount to 1.2 million, 360,000 in Texas alone,” said Hall. “For Canada, the numbers are even greater. 1.7 million jobs depend on exports from the U.S. to Canada. 32 states count us as their No. 1 international destination for exports. Nine more states count us as number two.”

“And I don't think they're going to be very happy to hear that their jobs are going to be compromised by the very-well-worked-out supply chain interactions between Canada and their particular state,” Hall added.

But keeping global trade flowing relatively freely, as it has been, isn't the president's objective. He apparently sees other countries as foes to be economically dominated.

After Trump returned from the G7 meeting in Europe, his two top advisers, H.R. McMaster and Gary Cohen penned an open letter in the *Washington Post* that provided this insight into the president's point of view:

“The president embarked on his first foreign trip with a clear-eyed outlook that the world is not a ‘global community’ but an arena where nations, non-governmental actors and businesses engage and compete for advantage.”

As the U.S. president endeavours to turn allies into competitors, the clarity Marchionni hoped for that comes with a stable and predictable global order for manufacturing seems even further away now than it did in late January. **CG**

# AFRICA FEEDING AFRICA

While North America's farmers pin their career hopes on the need to feed a hungry Africa, that continent's farmers are making plans of their own

BY LILIAN SCHAEER

**A** core belief in North American agriculture is that our farmers must produce ever more food if we are to have any hope of feeding the world, particularly areas like Africa where the population is growing so rapidly.

The numbers are indeed staggering.

According to the Population Reference Bureau, Africa's population will hit 2.5 billion by 2050, and the United Nations estimates that Africa's share of the global population will increase from 16 per cent in 2015 to 25 per cent in 2050 and 39 per cent in 2100.

These statistics certainly do underscore the need for additional food. But what about the other half of the

equation. Yes, demand will rise. But will that demand have to be met by imports?

Some African farm leaders are convinced that agricultural development on the continent will see Africa, led by South Africa, feed itself in the decades to come, meaning it will actually reduce its reliance on the global community for its food security.

Realistically, it may set its sights even higher.

"Agriculture accounts for 65 per cent of the continent's employment," said Dr. Klaus Eckstein, CEO of Bayer South Africa, at a recent conference of agricultural journalists in South Africa. "Africa has the potential to be self-sustaining as well as to feed the world. We can produce crops that match the standards of leading countries around the world."

His words were echoed by Dr. John Purchase, CEO of the Agricultural Business Chamber of South Africa, who stated that revitalizing the agriculture and agri-processing value chain is at the top of nine major focus areas for growth in the country.

It's not easy farming in South Africa, he added, citing political problems, land reform policies, and water scarcity as significant challenges. The current drought across the Southern and Western Cape areas of the country, a major horticultural production area, is the worst in more than a century, for example.

"Africa is where big population growth will come in the next 35 years... it's a massive opportunity for agriculture but also a critical risk if we don't get it right," Purchase said. "For example, how we manage our water is critical to the future, but we have diversity in South Africa where we can produce a whole range of crops from tropical through to livestock production."

Progress is already being made with South African farmers and marketers starting to grow sales on their own continent instead of in Europe or elsewhere.

According to Purchase, Africa has become a growing destination for South African agricultural exports since the global economic downturn in 2008 that affected the country's long-established export markets, particularly in Europe.

"By far since 2008, Africa is our destination; more than 50 per cent of our agricultural export goes into Africa," Purchase said, attributing a large portion of



For these workers inside a ZZZ avocado pack house, South Africa's strategy of building its economy on agriculture is providing stable employment and family incomes.

this success to South African supermarket chains expanding into neighbouring countries like Namibia, Botswana, Zambia, Mozambique, Lesotho, Swaziland, Mauritius and Zimbabwe.

The change is particularly evident in the fruit and vegetable sector. According to the South African Produce Marketing Association, Africa has surged to number two in the top five major export markets for African fruit, behind only the European Union, and ahead of Asia, the Middle East, United Kingdom and Russia.

In vegetables, Africa is also the second most popular destination, accounting for just over 34 per cent of all fresh vegetable exports from South Africa; 83 per cent of potatoes, 80 per cent of carrots, 78 per cent of garlic, 76 per cent of ginger, 54 per cent of cucumbers and 34 per cent of tomatoes stay on the continent.

"Africa is the only part in the world where land can still be brought into production; the countries with the biggest growth potential in Africa and potential for South African farmers are in western and eastern Africa," said Lindie Stroebel, CEO of the Produce Marketing Association. "Local procurement has become a priority for some supermarkets to address complications of transportation and border crossing."

This evolution is evidence of the forward-thinking attitude of many leading farmers in South Africa despite the risks posed by infrastructure challenges, climate change, government policies and a growing number of brutal attacks on predominantly white farmers in the country.

Brylene Chitsunge is one such example, having bought her 1,000-acre farm near Pretoria in 2010. The feisty black farm leader raises Kalahari red goats, a breed of African cattle called Nguni, pigs, ostrich, rabbits and chickens, as well as growing vegetable and fruit crops.

Innovation and collaboration are the name of the game on her farm, where she's willing to try just about anything to see if it will succeed, with the rule being "everything has to produce."

Chitsunge's small tomato crop now fills 10 greenhouses and is sold to over 200 restaurants as well as in leading South African retail chains like Pick n Pay and SPAR. She invented an overhead spray system for her greenhouses to help her produce a consistent, quality crop — each 1,000-plant



"We are building ZZZ for the future," says CEO Tommie van Zyl. "We are inspired by what we think we can become."

greenhouse will produce about 10 tons of tomatoes.

"Quality, sustainability and appearance are very important," Chitsunge said, adding that technology can help farmers add value. "I have cameras to stream video of my veggie fields or my chickens laying eggs for customers and I can remote-view my farm from anywhere."

She's also an outspoken advocate for advancing women and small-holder farmers, and for the need for education to build Africa's agricultural future.

"It's a value train, not a value chain," Chitsunge says. "Education is so important, and if we get that right, it's time for Africa," she said.

The Schoeman family has been growing citrus in South Africa for almost a century, and the family business ships oranges, lemons, and mandarins from its almost 3,500 acres northeast of Pretoria to 32 countries around the world, including Canada.



"We have such a belief in South Africa," says Kallie Schoeman, here in one of the family's lemon groves. His farm vision is direct: "Get bigger, get better or get out."

CONTINUED ON PAGE 52

They're in the midst of building a new pack house to accommodate new plantings of mandarins and lemons, and are transitioning towards bio-friendly production, always with an eye to the future.

"If my neighbour's farm goes up for sale, I would buy it; we have such a strong belief in South Africa," said family patriarch Kallie Schoeman, a former South African national farmer of the year whose self-proclaimed motto is: "Get bigger, get better or get out."

ZZ2 is one of South Africa's largest produce companies, growing tomatoes, avocados, mangoes, and more, as well as raising stud cattle and weaners. The family-owned business employs almost 10,000 people in primary agriculture throughout South Africa, and uses a consistently updated framework to lead company development for the next 12 months.

That includes constantly adding new crops, new land, new technologies, and new

markets as well as continually seeking out new opportunities.

For example, ZZ2 recently added almost 30 acres of cherries which strategically ripen about the time when British Columbia's crop ends — making the company the only one in the world with fresh cherries for a six-week period, said ZZ2's CEO Tommie van Zyl.

"We never thought we'd have a product that was so wanted it is being flown out — they're flying to Hong Kong right now," van Zyl said.

It's a pattern that is repeated more and more, with horticulture creating models for other farmers to follow.

"We are building ZZ2 for the future, and the way we see things developing, it will represent in the future what South Africa looks like," said van Zyl. "The future is more important than the past... we are inspired by what we think we can become." **CG**



Already farming 1,000 acres, Brylene Chitsunge sees bigger opportunities ahead.

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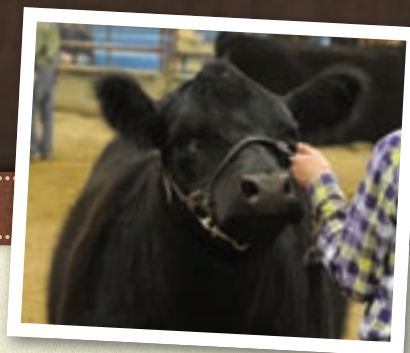
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# Sibling rivalry

... and how to prevent it destroying your family business!

A family business can have many positive advantages, including strong cohesion among members and a shared commitment to success. However, family businesses can also sometimes be highly conflictual and chaotic.

It seems your strength can become your weakness.

Managing a business with family members creates several issues that can have a huge impact on the survival of the business, as proved by research showing fewer than 30 per cent of family businesses survive to the second generation and only 10 per cent pass to the third.

Among the different issues leading to such failures, conflict between the children involved in the business can be especially damaging.

This kind of conflict is commonly referred to as “sibling rivalry” and can be devastating when the siblings are highly involved in the family business and are intensely engaged in competition between one another.

Behavioural research shows that sibling rivalry has two different sources: the emotional and the strategic.

Below, I will differentiate between the two types and then provide some solutions for each.

## EMOTION-BASED RIVALRY

The first type of rivalry is based on an emotional issue stemming from childhood. This can be observed in different levels of intensity among children who may fight between each other in order to gain their parents’ attention, recognition and love.

In such cases, the parents may — either consciously or uncon-

sciously — show their preference for one child over the other.

According to many studies, almost two-thirds of adults reported that their parents did have favourites. This situation during childhood leads to a competition between the siblings as they fight over a limited resource: the love of their parents.

When parents have raised their children sufficiently well, this fundamental issue is corrected in adulthood.

But when this is not the case, the siblings remain stuck at the level of a child with regard to emotional intelligence, and they are not equipped to deal with their need to be loved.

The struggle for their parent’s affection and attention can be so intense that it often leads to unhealthy conflicts in the organization.

In some cases, the rivalry becomes so intolerable that it is impossible for the siblings to continue working in the same environment together. In some cases, it can directly cause the business transfer to fail.

## SOLUTION:

To solve emotion-based rivalry, it is important to work on improving the emotional intelligence of the children. This can be accomplished by encouraging them to engage in activities outside the organization, for example by working in another business. Such off-farm experiences can help them recognize their own value and trust their own capabilities. They will then gain more confidence in themselves and understand that they no longer need as much love and recognition from their parents.

Another method of preventing this issue is to ensure that

the siblings do not have the same expertise within the company. This way, they won’t be able to compare themselves to one another as much and will need to rely on each other’s specialty. Having two distinct fields of expertise lowers the risks of siblings fighting to outshine each other in front of their parents.

Seeking the help of a professional can also be very helpful in dealing with this issue. Two approaches can be explored. The expert could directly work with both parents and the children in order to improve their own emotional intelligence. Another approach could be for the expert to help with the siblings’ emotional intelligence and lack of confidence.

It is important to know that if the source of the problem is not dealt with, the rivalry can continue even after the death of the parents. This is because the issue is founded on an emotional deficiency during childhood and not the relationship between the siblings.

## STRATEGY-BASED RIVALRY

We also can observe a strategic rivalry. In this case, the problems are rooted in diverging visions of the company. For instance, the children cannot agree on business goals, level of risk tolerance, roles, responsibilities and salaries.

This can also be related to the personal issues of a sibling, such as if one brother is always late. This might not be a problem when encountered a few times a year at family gatherings, but might be a serious issue if the siblings work together. Tardiness can be the source of various conflicts within the organization.

A similar problem occurs if a sibling has a dependency on alcohol, drugs, sex or technology. The addiction will affect a lot more of the relationship between the siblings if they work together every day.

## SOLUTION:

Strategic development with a professional could be very helpful to define the organization’s vision and mission, the rules, the paycheque, the holidays, the business’ goals, and so on.

The professional can also take part in the annual meeting to help facilitate discussion and to ensure that the overall family objectives are respected by all members.

## IN THE END, CHOOSE YOUR FIGHT!

Sibling rivalry is a very serious issue that must be addressed as soon as possible. Otherwise it can lead to the ruin of the family business or even bankruptcy.

Once you have made the distinction between the two sources of the sibling rivalry, then you can start thinking about finding appropriate solutions, remembering that some siblings might show symptoms of both rivalries.

Your priority is to be part of the successful 10 per cent.

But be aware that even though there are many professionals and advisers who may be able to help, sometimes a separation between the business holders is the only solution.

It is a very tough decision to abandon the family business. But is it worth risking your whole family for? **CG**



**Pierrette Desrosiers, MPS, CRHA** is a work psychologist, professional speaker, coach and author who specializes in the agricultural industry. She comes from a family of farmers and she and her husband have farmed for more than 25 years. Contact her at: [pierrette@pierrettedesrosiers.com](mailto:pierrette@pierrettedesrosiers.com). [www.pierrettedesrosiers.com](http://www.pierrettedesrosiers.com)

# Get your nature fix

And make sure the rest of the family does too.  
Just 15 minutes in nature can cut stress levels

BY HELEN LAMMERS-HELPS

**B**eing surrounded by wide open spaces and nature is undoubtedly one of the benefits of a farming lifestyle. Unfortunately, as farms get bigger, busier and more high-tech, farmers may find they are spending less time enjoying nature.

Even worse, as our children spend more time indoors or on screens, they are losing out on the benefits of being outdoors too.

While intuitively we know that being in nature is good for us, there is now hard evidence that time spent in nature reduces stress while increasing our productivity and creativity.

But how much time do we have to spend in nature to get the effect? And just how natural does it have to be to make a difference? Do we have to backpack our way into pristine wilderness, or will taking the time to watch the sun set over the fields count?

These are the kinds of questions Washington, D.C. environmental journalist Florence Williams set out to answer in her new book, *The Nature Fix: Why Nature Makes Us Happier, Healthier, and More Creative*.

Williams had felt the impact of not spending enough time in nature firsthand when she moved from Colorado's Rocky Mountains to urban Washington, D.C. "After the move, I had more trouble sleeping and I became more anxious," she explains.

Williams travelled the world to find out what scien-

tists had learned about Nature Deficit Disorder, a term coined by author Richard Louv in his groundbreaking 2005 book, *Last Child in the Woods: Saving our Children from Nature Deficit Disorder*.

Williams' research took her to countries where the appreciation for the connection between nature and well-being is already well recognized. She travelled to Japan where the Japanese practice what they call forest bathing. Williams describes this as strolling in the forest with total sensory engagement — listening, feeling, smelling and hearing the elements of nature.

The Japanese Forest Agency has dozens of Forest Therapy Rangers who lead people on guided walks on forest therapy trails, she says.

The research shows that our nervous systems begin to respond to nature in as little as 15 minutes, says Williams. Our blood pressure drops, our stress hormone levels drop, our parasympathetic system (also called the "rest and digest" system) becomes more active and our sympathetic (fight or flight) system becomes deactivated.

The most restorative environment is one that is interesting but not too interesting, says Williams. Watching a sunset or watching the rain are generally soothing to most humans as are nature sounds, especially wind, water and birds. Surveys indicate people are most attracted to water followed by trees, she adds.

How much time in nature you or I might need for optimum health varies between us as individuals. Some people do not de-stress in nature, whether it's because of the bugs, the heat or the cold, explains Williams. However, Finnish research indicates on average a minimum of five hours per month is needed to stave off mild depression. Participants who spent at least 10 hours per month in nature experienced even more positive benefits.

Williams has determined that her sweet spot is a minimum of 30 minutes per day spent walking on a trail near her home. To get the most benefit from time spent in nature she recommends being mindful of the experience. "Take out your earbuds and put away your phone. Engage with the natural elements, search out birds and other wildlife," she says. "Pay attention to what makes you feel good."

And be sure to soak up the smells, Williams says. "The nose is a direct pathway to the brain."

Although a walk in an urban park, a view of greenery through a window, or even watching nature videos



“Our physiology is still adapted to being in nature,” Williams writes

can have some benefit, there is more positive impact when you can “escape into a more fully immersive natural environment,” Williams adds.

To rank the health benefits of different types of natural environments, Tim Beatley of the University of Virginia developed the Nature Pyramid, modelled after the Food Pyramid used for healthy eating guidelines. At the base of the pyramid are the daily interactions that can help us de-stress and reduce mental fatigue. This is what Williams calls “nearby nature,” such as the trees and birds in our immediate environment.

Going up a level in the pyramid would be weekly outings to more natural forested areas and water bodies. Further up would ideally be to escape one weekend per month to a restful natural area. At the pinnacle would be an annual trek for multiple days to a more pristine wilderness.

This is, of course, the ideal, but even if you can’t achieve the ideal, it’s certainly good to be mindful of the recommendations. Just as we plan for healthy eating and regular exercise, we can make time spent in nature part of our schedule. And if you’re experiencing burnout, spending some time at a cottage or camping in the back country might help restore your resilience.

#### DON’T FORGET THE CHILDREN

As our schools cut recess time and pave over school yards, there are implications for our children, especially since they are generally less active and spend more time on digital devices than in years past.

Many northern European schools are moving in the opposite direction. Williams travelled to Scotland and

Sweden to witness Forest Schools in action. There, children spend a good part of their day playing and learning in nature. “This is how brains grow and learn,” says Williams, who was impressed at how, in the forest schools, curiosity drives learning and the kids learn to get along. “It’s so sad to put little kids in school with four walls and make them sit inside all day.”

In Scandinavia, 10 per cent of children already attend Forest Schools, and the concept is becoming popular in Germany and the U.K. Now it has even spread to Victoria, B.C. where there are two Nature Kindergartens.

It shouldn’t surprise us that our minds and bodies are most at ease in natural surroundings, says Williams. “This is where we evolved and our physiology is still adapted to being in nature.”

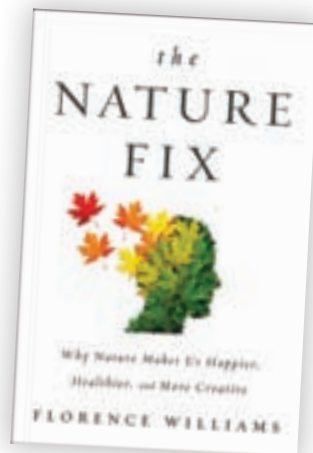
Fortunately, living in the countryside means that the restorative benefits of nature are never too far away... as long as we make an effort to tap into the resource that is all around us. **CG**

## Resources

The Nature Fix: Why Nature Makes Us Happier, Healthier, and More Creative (2017) by Florence Williams.

Biophilia (1984) by E.O. Wilson.

Last Child in the Woods: Saving our Children from Nature Deficit Disorder (2008) by Richard Louv.



*If it weren't for the messages from some of the leaders I connected with, I wouldn't have this clear vision nor the motivation to go after it. I can't thank you enough for that. – Jen C., Ontario, AWC Delegate*

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# BLOOD CLOTTING — new alternatives to warfarin

**Y**ou probably take your blood's ability to clot for granted. You cut your finger, and somehow the bleeding stops on its own!

However, if you have a disease or condition for which you need to prevent clotting, you may take an oral or injectable anticoagulant.

Atrial fibrillation is a type of irregular heart beat that allows your blood to pool and clot in your heart, which obviously is not good. It is estimated that one in four Canadians over 40 years of age has this heart beat irregularity, and many do not even know they are at risk.

## DOACs may provide a good alternative to warfarin if you need an anticoagulant

Deep vein thrombosis is a blood clot or thrombosis usually in the deep veins of your legs. If the clot detaches from the vein wall it is called an embolism and can travel throughout your body to lodge in your lungs, heart, or even brain.

On a long-haul flight (considered by the airline industry as any flight over two hours), sitting in a cramped seat for those hours may cause your blood to pool in your legs, and this in turn may lead to deep vein thrombosis or DVT.

A good preventive measure is wearing compression stockings to prevent the potential blood pool-

ing. DVT can also occur after major surgery — especially knee or hip replacement surgery.

Joint replacement surgery is becoming more common with Canada's aging population. In 2014 there were 8,500 of these surgeries, and forecasters predict we will continue to see increases of 20 per cent per year.

Regardless of why you need an anticoagulant, until recently warfarin was the one option that was commonly used. It is a vitamin K antagonist, and it works by depleting stores of this vitamin that your body needs to clot blood.

However, warfarin's action is slow to start because you need to wait until the vitamin K is depleted.

As well, warfarin has many drug and food interactions, and the way your body handles warfarin depends upon your genetic makeup.

All these factors mean that doses of warfarin change depending upon lab results and vary from person to person. They also mean that with warfarin, regular monitoring is needed to ensure that its actions are within specific parameters. We need to be sure your blood does not clot too much, or not enough!

The newest group of anticoagulants are known as the direct acting oral anticoagulants or DOACs. They act directly on coagulation factors and thus are faster acting and have shorter durations of action.

DOACs also are more predictable in their actions and have fewer drug interactions. If you need to take an anticoagulant for an ongoing condition like atrial fibrillation, then you don't need the regimen

of lab work. And, even if you have joint replacement surgery, they are more convenient to use.

Three DOACs are available: apixaban, dabigatran, and rivaroxaban. Both apixaban and dabigatran need twice daily dosing, but rivaroxaban is only once a day with a recommendation for taking it with your evening meal.

DOACs should be avoided if you do not have good kidney function; there needs to be dose adjustment made for apixaban and dabigatran even if there is only moderate kidney function impairment.

All can cause too much bleeding, most often noticed as bruising, although by stopping the drug this can be quickly reversed. Both apixaban and rivaroxaban can be crushed if you can't swallow tablets, but dabigatran needs to remain in its original package until you take it.

You often see television and magazine ads for new drugs, DOACs included, and you may wonder if they are as good as they sound. DOACs certainly won't eliminate your need for an anticoagulant, but they are a good alternative to warfarin for some people. **CG**



**Marie Berry** is a lawyer/pharmacist interested in health and education.

## NEXT ISSUE

Restless leg syndrome is involuntary movement of your legs, especially at night. While not deadly, the condition can be most problematic and disturb your sleep. Next month, we'll look at some treatment options including non-drug approaches for restless leg syndrome.

## The family takes a look around

With the crop ready to come off, it's time to make the kinds of decisions only farmers have to make

**O**n his first day swathing canola, Jeff was surprised when he checked the time on his phone and realized he'd accidentally finished his lunch before 10:30 a.m. "Have to adjust to the harvest schedule," he thought.

With his lunch finished, the GPS finally auto-steering correctly, and the crop feeding through the swather — as Jeff's grandfather Ed might have said — "as slick as grease through a goose," Jeff had time to think.

Jeff was pleased with what he saw, but also remembered how he had worried after seeding while they waited for rain.

"How did we go from epic flood to disastrous drought in just six years?" Jeff's wife Elaine had called out from the office one evening back in June while she was at her desk, entering the final seeding expenses into their accounting software. Jeff had gone in to see if he could help.

"We just got our heads above water, literally, after the 2011 flood," Elaine said as she hit the "print" button so she could file the May bank reconciliation. "And now here we are again, wondering if we'll get our costs back from this year's crop."

"It'll rain," Jeff said. "All the forecasts are calling for rain."

"They called for rain last week too," Elaine said. "But the lawn is yellow and half my garden didn't come up."

"We won't have to eat zucchini," Jeff joked, looking for a bright side. But it wasn't until a week later, when it finally rained, that Jeff started to believe their 2017 crop had a chance. With two inches of rain, clouds in the sky and more moisture in the

forecast, Jeff and Elaine were both optimistic.

Only six-year-old Connor was unhappy. "Soccer's cancelled," he complained while he and Jeff stood in front of the patio door, watching raindrops land on the deck.

A few weeks later, Jeff and Elaine took Connor and three-year-old Jenny to the field to show them what the rain had done for the crop. Jeff launched the small drone he'd just bought and flew it out over the canola field.



**How much more risk can we take on?" Elaine asked. "Every year seems so close to financial disaster."**

"It'll take pictures," he told the kids. "We can put them on our computer and see how big the plants are."

Once the drone was flying steadily, Jeff passed the controller to Connor. "Your turn."

Jeff was patient, showing Connor which buttons to push while the drone travelled over the field.

"Mommy, Connor's flying!" Jenny shouted.

Connor picked up her mood. "I'm flying! I'm flying!" He forgot he was a mature first-grader and jumped up and down.

Connor wasn't normally clumsy, but watching the drone and holding the controls made jumping up and down one task too many. He landed in a gopher hole, fell to his knees and slammed the remote into the ground.

Elaine rushed to see if Connor was okay; Jeff watched his drone zoom left, then dive into the field.

"Connor crashed," Jenny said sadly.

Jeff and Elaine packed the kids back into the side-by-side and drove to where they thought they'd seen the drone land. They searched until Connor and Jenny were bored. Then Jeff took his family home and went back out to look some more.

"Can't ask for a better crop," Jeff told his father that evening. "Thick enough to hide a drone."

"How much did that toy cost again?" Dale answered.

By the time it was ready to swath, the crop was still looking good.

"This might be the best crop we've had in years," Jeff told Elaine.

"It has to be our turn," Elaine said.

Now, in early August, with nothing to do but watch the the sturdy canola stalks pile up on the reel and feed into a thick swath, Jeff's mind drifted over to their new problem.

A few weeks earlier, the STARS air ambulance had flown ominously near the Hanson farm. Jeff's phone had started ringing right away, as people who'd seen the helicopter tried to find out who was hurt or sick. After a few calls, Jeff learned the helicopter had come for their neighbour Brian Miller. He'd been in an accident on the grid road in front of his own yard, hit by a semi hauling oil when he slowed his grain truck to turn.

The Hansons were sad and upset when Brian didn't survive. They immediately agreed to help harvest

CONTINUED ON PAGE 58



## REFLECTIONS

BY ROD ANDREWS

RETIRED ANGLICAN BISHOP

his three sections of land when the time came. But the next decision would take more thinking. Brian's only son had been working in the oil patch for years and had no interest in farming. The Millers were selling the land.

"Should we bid?" Jeff's father asked when they heard the news. "It's good land. A great location."

Jeff didn't know what to say. Land only 20 miles from them had just sold for \$1,250 an acre — maybe not a high price in some areas of the country, but hard to pay back with the profits from dryland farming.

"That's \$200,000 a quarter," Elaine had said, shaking her head. "This has to be the top of the market. Can we make back more than a million dollars?"

Jeff's grandfather Ed had also been in the shop that day. "Kids like you've never lived through a real drought. Over the last 10 years anybody who could run a tractor could print money. But there's tough times ahead. Mark my words." Then he changed his tune to point out the other side of the argument. "But it's land. They're not making any more of it."

"Interest rates have to go up," Dale said. "But not back to the double-digit rates of the '80s."

"The weather's been so crazy," Elaine said. "Floods. Hail. We almost had a drought. How much more risk can we take on, when every year seems so close to financial disaster?"

Not for the first time, just when the Hansons thought Connor wasn't paying attention to the conversation, or wouldn't understand them if he was listening, the little boy piped up from the corner where he was playing with the cat. "If we have more land there'll be more fields for me to combine when I'm old enough!"

With the Miller family wanting to settle the estate relatively quickly, Jeff knew they didn't have a lot of time to decide. He appreciated input from his grandfather and his parents, but, in the end, it would be Jeff and Elaine living with the decision for the rest of their careers. This purchase might build their farm for the next generation. Or it might give them just enough debt to drive them out of business.

Jeff was distracted from thoughts of profit margins and debt ratios by a glint of light in the corner of his left eye. Something shiny on the swather canvas was reflecting the midday sun. He jerked the reel to a stop and climbed down from the cab to look.

It was the drone. It had faded in the sun, but otherwise, it was relatively undamaged after spending the summer out in the canola. Jeff wondered if he might even be able to pull the midsummer photos from the camera chip.

"Maybe it's a sign," he texted Elaine.

"Are there any questions?" The conference leader provides a lengthy welcome; name tags, room keys, worship times, parking spots, washroom locations, emergency exits... He asks for questions. Patrick, often mischievous, raises his hand. The leader is perplexed. "What did I miss?" Patrick asks, "What is the meaning of life?" As the laughter subsides, I reflect that Patrick has posed the most important question of all.

Actor Will Smith plays the role of Howard, a New York adman, in the movie *Collateral Beauty*. His character is thrust into a deep depression when his six-year-old child dies. Nothing makes sense to Howard. He writes three letters to Time, Love and Death posing deep questions. Is there any meaning to existence?

Howard's professional colleagues intercept his letters and develop a scheme to help him. They hire three actors to play the roles of Time, Love and Death. The actors are to confront Howard in a desperate attempt to make his life meaningful again.

The actors show up one by one, Howard's letters in hand. He clings to his anger, rejecting every effort to lift his depression.

The young man who plays Time tries to give Howard a new perspective. We are only passing through the world. We should not waste the gift of time. Death will inevitably come. In the meantime we should make something good of our lives. Time tells Howard, "If love is creation, and death is destruction, I am the bridge."

The woman who plays the part of Love tells Howard, "I am in all of life. I am the rain, darkness, sunshine, light." She pleads, "Please don't try to live without me." She admits that "Love will never bring your daughter back, and it will never make it okay." She promises that love can make life worthwhile and meaningful.

An elderly woman plays the part of Death. She counsels Howard, "Death is a natural part of life, not to be feared or hated." Death demonstrates that goodness and love are all that matters.

As their daughter is dying, Howard's wife Madeline sits crying in the waiting room of the hospital. A woman sitting beside Madeline asks, "Are you losing someone?" The woman consoles Madeline, "Just be sure to notice the collateral beauty."

In the end Howard summarizes his renewed view of life, "We long for love, wish we had more time and we fear death."

When the movie ended, two young people began brushing up popcorn and picking up drink containers. I sat for a while and reflected. The three abstractions Time, Love and Death connect every single human being.

"What is the meaning of life?" The answer is complex and different for each one of us.

In her book *Wild Rose*, author Sharon Butala creates a character named Sophie. Sophie, a single woman, relies on her own strength to survive on the prairies in the late 1800s. "She began to understand that there were not always answers for the deepest questions, that some things, no matter how important, were things a person would never know, and all the thinking in the world would not give an answer."

"What is the meaning of life?" Patrick's question was not answered at the conference. Like the rest of us, Patrick went on asking and searching. I think we find meaning in our experiences, our relationships and our daily life. Finding the meaning of life is a relentless quest.

An old catechism asks, "Why did God make you?" The answer: "Because he thought you would like life."

**Suggested Scripture: Deuteronomy 30:15-20, James 4:13-15**

Rod Andrews is a retired Anglican bishop. He lives in Saskatoon.

Leeann Minogue is the editor of *Grainews*, a playwright and part of a family grain farm in southeastern Saskatchewan.

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