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Kristi Nylen-Burns is clear about it. Joining their next-gen peer group is the best decision she and husband Dustin have made. Here's how it keeps paying.

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If Harvey Weinstein was a farmer



It's amazing how much we can be blind to, especially when we like to think that nothing ever gets past us

Really, the question isn't whether there might be a Harvey Weinstein in Canadian agriculture, but how many of them there are likely to be.

I'm not one to doubt the fundamental decency of farm society. In fact, I believe in it implicitly. Yes, farm society has had to evolve like other sectors have had to evolve, but none of us arrived in the world with a set of 2018 morals carved in our genes, and farm societies in my experience have made more room for differences than most people outside of agriculture would ever expect. No one has boasted about it, we've just gotten on with the job of taking our neighbours as we find them.

But, of course, we must not be too forgiving of ourselves.

One of the great shocks of my professional career came when I interviewed the head of a rural women's shelter here in Ontario.

It was an afternoon that fundamentally reshaped my perspective. It wasn't that I had doubted there could be spousal abuse on the back roads. It was just that I was sure there wasn't any along the roads in my area.

Then I began to see the patterns. Don't you know any farm, I was asked, where the wife used to be very outgoing and social, and now seems to have given up all her connections, or where it's only the husband who ever answers the phone, and where no one gets invited over.

The list goes on, but you get my point. The warning signs had been

there all along. I had just been blind to them.

So too was the way that these warning signs crossed financial and income barriers that I had thought were proof against them.

In agriculture, this #MeToo winter is an opportunity to do the listening and the learning that we should have been doing all along, but that was too easy to ignore.

It doesn't mean that all men are guilty, but it does mean that if we don't take this opportunity to learn, we are in fact complicit.

As you will read in Lisa McLean's excellent article in this issue, the issues go beyond the threat of sexual violence and harassment (although I recommend you do read the sidebar from lawyer Cherolyn Knapp on the advisability of setting up your own on-farm standards).

The issue must also involve a fundamental discussion about disrespect, and the evils that take root within it.

The truth is that the agriculture I know excels in every field. Farmers are leaders in technology and science. They are brilliant at organizing and adapting themselves to a world that seems to change with every season.

It means to me that if farmers put their hearts to it, they can excel in treating women equitably too. Agriculture can be a role model for the rest of society, and it can be perceived as that.

It's a goal within our grasp.

Am I getting it right? Let me know at 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
(519) 674-1449 Fax (519) 674-5229

Senior Business Editor: Maggie Van Camp
mvincamp@fbcpublishing.com
(905) 986-9991 Fax (905) 986-9991

Production Editor: John Morriss
john.morriss@fbcpublishing.com

Field Editor: Lisa Guenther
lisa.guenther@fbcpublishing.com

Field Editor: Shannon VanRaes
shannon.vanraes@fbcpublishing.com

Online Editor: Greg Berg
country-guide.ca

Design & Layout: Jenelle Jensen

ADVERTISING SALES

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

Kevin Yaworsky
kyaworsky@farmmedia.com
(250) 869-5326

Lillie Ann Morris
lamorris@xplornet.com
(905) 838-2826

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

Glacier FarmMedia LP President: Bob Willcox
bwilcox@farmmedia.com

Publisher: Lynda Tityk
lynda.tityk@fbcpublishing.com

Editorial Director: Laura Rance
laura@fbcpublishing.com

Production Director: Shawna Gibson
shawna@fbcpublishing.com

Circulation Manager: Heather Anderson
heather@fbcpublishing.com

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Above: A cutaway view of a Xaver robot shows it is built on a modular design, and in the future it could potentially be repurposed to do jobs other than seeding corn.

PHOTO: SCOTT GARVEY

‘Xaver’-ing success

AGCO’s MARS project lands a new name ahead of its market release

BY SCOTT GARVEY / CG MACHINERY EDITOR

Several months ago *Country Guide* reported on the field robot project called MARS, which is an acronym for Mobile Agricultural Robot Swarms. It began as a joint research project between the European Commission and AGCO’s Fendt brand.

At the Agritechnica machinery show in Hanover, Germany, in November, AGCO revealed the project has moved beyond the development stage. Now the company is almost ready to let the machines loose on a limited release ahead of a full-scale market introduction.

And along with entering a new phase of development comes a new name for the 60-kilogram robots: Xaver.

“We started with a research project funded by the European Commission in May of 2015,” explained Thiemo Buchner, project lead at Fendt Robotics. “The research part lasted 18 months. In October of 2016 we finished the research. After that it was completely taken over by AGCO. That was the pre-product development. We’re now in the product development phase, because we’re aiming at the commercialization of the Xaver.”

The new name demonstrates that the project is on track, Buchner continued. “We’ve left the research phase

and gone into real product development now. MARS was the research project. Xaver is the product. Xaver is the first name of our founder, Xaver Fendt. And it’s also like Alexa from Amazon. You can now say, ‘Okay, Xaver, please seed the field.’”

The little robots are designed to work in groups. The “swarms” are completely controlled by a special program that sends instructions to the machines and gets data back from them through the Cloud, such as the exact GPS position of each planted seed.

“What’s important to understand is that the whole system is working autonomously,” said Buchner. “The farmer just puts the trailer, which is the logistic unit, near the field, presses a button, and after that our algorithm and the Cloud take over. It does plot planning for all the robots. It receives the position of each robot and it also stores each seed position in its database. So for later applications you know where the plant will grow.”

Each robot is capable of planting between 0.1 and 0.15 hectares (about 0.25 of an acre) per hour, so a swarm of 10 will cover about one to 1.5 hectares (2.5 acres) in the same time.

Buchner believes in the conditions typical of West-

ern Europe 15 robots could replace a conventional eight-row planter.

“And if you think of the 24/7 capability of the system, even less (robots would be needed), because they all work all night long,” he added.

There is redundancy built into the Xaver system to account for any unexpected failure of a single unit. The control program will automatically issue new instructions to the remaining units to cover for any one that goes down, and operators can monitor the progress of the machines from a portable smart device.

“You can look on your app and see how far the seeding process is, where the robots are driving,” said Buchner. “You can stop or let the

robot return to the logistic system if you want to. But the important thing is you don’t have a necessity to input with the system during operation. So no operator needed.”

Each unit can travel up to 60 km/h, and the battery powering them will last for 2.5 to three hours. When the power level gets too low, each unit will automatically return to the charging station, which is in the logistics trailer. There it not only gets a recharge, the seed hopper is also automatically refilled. Each Xaver unit can hold up to 25,000 seeds. That’s enough to plant about 0.25 of a hectare (0.6 of an acre).

Starting in 2019, the brand will offer Xaver on a limited market introduction basis.

“We will have a pilot series in 2019, maybe a pay-for-use model, where we go out with the robots and do some seeding in clients’ fields,” said Buchner.

Right now the Xaver system is only designed to seed corn, but after it becomes widely available as a regular product from Fendt (and possibly dealers of other AGCO brands), Buchner thinks engineers will look at expanding what the little robots can do.

“We have this in the back of our minds, of course,” he said. “It’s highly modular. You could maybe put other modules inside. Instead of seeding, you could maybe think of scouting applications, for instance, or weed control.” **CG**



This AGCO display image shows the logistics trailer where all the Xaver robots are programmed to return for battery recharging and seed refills. PHOTO: AGCO



The small Xaver robots from Fendt won a Silver Innovation Award at Agritechnica in November. PHOTO: SCOTT GARVEY

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PEER THINK

These new peer groups are drawing rave reviews from their members. Are they the most inspirational and perhaps the most essential business idea of the new millennium? It's a big claim, but it's tough to argue against this newest iteration of farmers helping farmers

The right next step

Brooks and Jen White have always focused on improving their management decision-making. For them, that makes a peer group a key growth strategy

BY MAGGIE VANCAMP / CG SENIOR BUSINESS EDITOR

Located in the extreme southwest of Manitoba, Brooks and Jen White's 7,500-acre farm spills gently into Saskatchewan while its southern edge leans up against the U.S. border. They call their farm "Borderland Agriculture" and it evokes a scene from an old western, with bison grazing the gold and green prairie fields.

A closer look opens up a very different story, though. It's one where scale and modern management practices are used to integrate their 600-head bison herd with a diverse cropping system, including stubble, winter and intensive grazing systems.

Altogether the Whites grow about 5,000 acres of a wide range of crops including corn, soybeans, peas, canola, fababeans, winter wheat, rye, hemp, and oats. Plus, this year, two thirds of the farm was managed with some type of intercrop, relay crop, or cover crop.

On this farm, though, pushing the boundaries of leading-edge management goes beyond diversifying their production system.

Business management gets equally intensive analysis, and the Whites are constantly learning, building strong financial management skills, and motivating a team of eight people.

It takes a mindset that values both learning and leading, they say, and for that the Whites believe they need to be able to look beyond the limits of their individual experience. Networking with others who can share their perspectives about how they have identified and addressed their own challenges is their foundational strategy for continued growth and success.

In other words, peer-networking groups give them their edge.

"I've really noticed how being part of these groups has impacted not only our conversations, but also our accountability as well," Jen says. "We used to come home from seminars with all the enthusiasm, discussing how and what we could do to make changes. But it seemed that the excitement of it all would get set aside once we

got back home because farm life would get back to being busy as usual, and nothing would get implemented."

Now they come home, make a plan and put it into place so they can report back to the group as to how and what they have actually accomplished.

Networking can at times seem an extra burden on the family, and it can take them away from the farm, Jen says. "But all the networking with like-minded individuals leads to intriguing conversations which turn into innovative ideas that bring progressive change for our farm and for our family. And change is an amazing thing."

A few years ago the Whites took CTEAM, a two-year farm management program in which the same group of farmers met four times across Canada. An important part of the CTEAM course was the networking and feedback that they received from other farmers, says White.

The CTEAM peer group helped the Whites find direction for their farm. At the time, they weren't sure which sector they should focus their expansion on, but the answer from the group was clear.

The Whites had first invested in bison in 1999 with 33 head and had grown it steadily since. "They (the other CTEAM farmers) guided me and informed me in most of our group discussions that it was our bison operation that I seemed to be the most interested in, and that is where I should be looking into the future," says Brooks.

But that was only the beginning of the benefits the couple scored from networking with others. One of the most important things, Brooks now believes, was how others were dealing with human resources issues.

"I learned that a lot of us have the same issues when it comes to HR and we are all learning," he says. "Most of us as farmers haven't been trained to manage people as much as we have to manage the operations."

Even though his class graduated from CTEAM in 2015, many of the people who took the course have continued to meet and an informal peer group of the graduates formed in Western Canada. However, the logistics

of getting even this smaller group together multiple times per year proved difficult and eventually it began winding down.

“After I saw the value from meeting with the same like-minded farmers in the CTEAM group, I felt I needed to continue this on a more regional level,” says Brooks.

So last year, Brooks joined a new peer group, only attending one meeting so far. It was important to him to join a group from outside his local area and outside his sector, but geographically close enough to not prevent their having regular meetings.

In other words, not too close, and not too far.

It wouldn't work if the other members of the group were his neighbours. “There's some level of comfort when you don't know the people in your group or feel like you are competing with them in any way,” Brooks says. “It's easier to disclose sensitive topics for discussion when you don't have to worry about your ideas or concerns getting back to the local coffee shop gossip.”

And comfort is essential.

It becomes a more valuable experience when you feel you can open up any topic, says White. “With my previous group (at CTEAM) I felt comfortable discussing financial statements, future plans, land rental agreements, and employee issues. I wouldn't likely do that in a meeting with neighbours.”

HAND-SELECTED, LIKE-MINDED

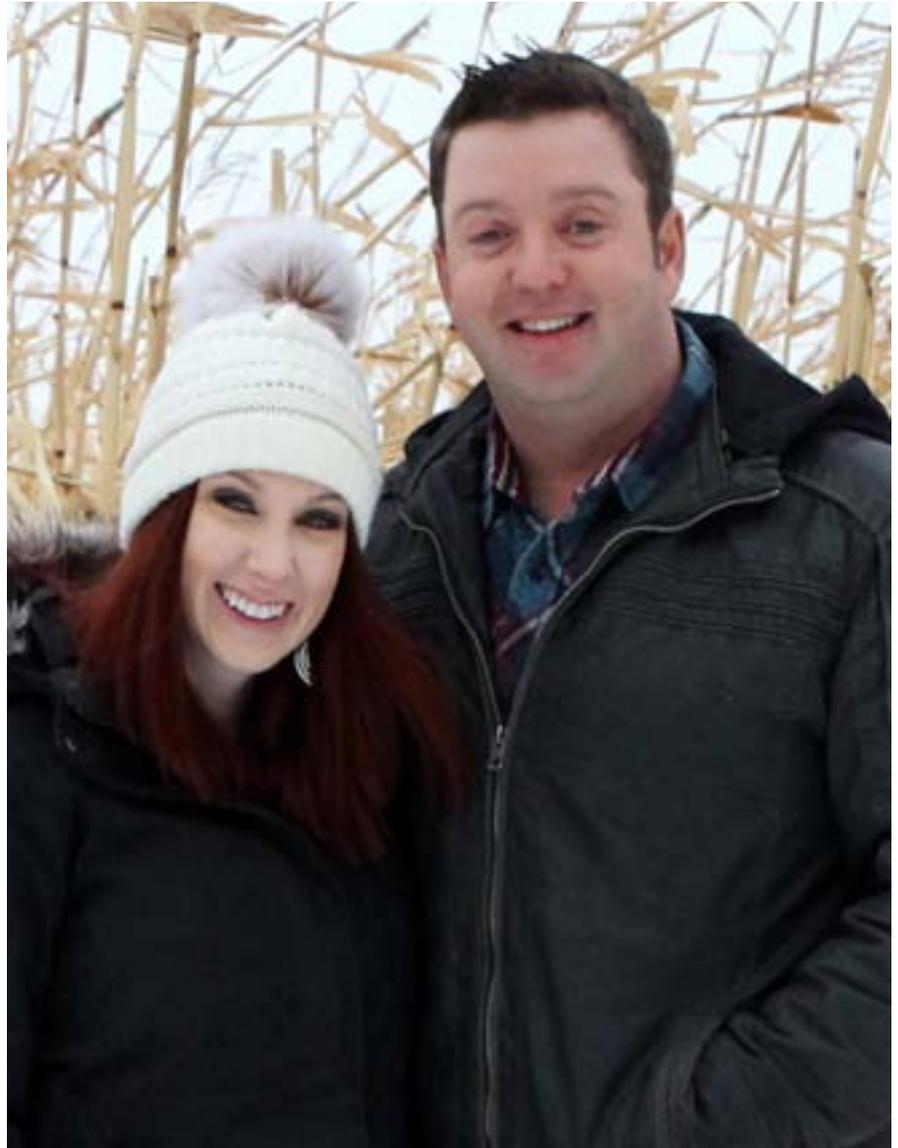
The peer group White joined is organized by Terry Betker and is called Backswath's Peer-to-Peer Network (www.backswath.com/services/peer-groups.html).

Betker formed this peer group of mostly younger farmers last year, and is in the process of putting together two other groups this winter.

Four years ago he started the first one with a group of nine grain farmers from the Prairies. In the interim, a few have transitioned out and been replaced, but the overall group is still meeting three times a year.

It had started when one farmer pushed Betker to organize a peer group, something he had always wanted to try. After a conference call and some time gathering a list of names of potential farmers who would make for a strong peer group, the first network was born.

The book *Power of Peers* by Leon Shapiro and Leo Bottary of Vistage Worldwide lists



five essential factors needed for peer advantage. At the top is selecting the right peers. It's important to have individuals that the other members can relate to and who will foster valuable interaction.

Betker says he deeply enjoys facilitating the groups and has found several key ingredients to their success. First, actively selecting members, which means putting together people with similar challenges and yet farms that are not in competition with each other.

Members must also pay a significant annual fee. Brooks says the cost to joining the new group is about \$3,000, but he has no doubt the return on investment will be much more than that, after a couple more meetings. After just the first meeting he already took note of a couple of new things to look into that may work for their own farm.

“It only takes one good idea that you

find another producer is doing that you can implement on your operation to recover that cost,” he says.

ACCOUNTABILITY

Secondly, Betker has found it's essential to put the group in the members' hands, so the group selects the topics to discuss and it produces the general vision of what they want out of the peer group.

The group also develops a charter defining how it will manage itself, who can join, and how people are expelled.

Backswath's groups work in annual cycles of three meetings, usually two in a central location like Regina and one at a member's farm. Meeting on the farms of

CONTINUED ON PAGE 10

members creates an opportunity for fellow group members to witness firsthand the challenges or problems the manager maybe doesn't recognize, sort of seeing the blind spots. And they get to know each other better by seeing what their home and farm actually looks like and meeting their families.

In the fall, each member presents a business overview of their farm, including strategy, vision, what they want to accomplish in the next five years and how they are going to get there with the people, assets and finances involved.

This is the part of peer groups that pushes accountability between the members — one of the keys to a successful peer group, Betker says.

It's particularly motivational because, in the following meetings, the members each have to report how they are progressing on those goals, says Betker.

SOUNDING BOARDS AND SHARING

Each participant is expected to benefit from a meeting but must also contribute. The concept is that the farm should be challenged but not criticized.

Huge value comes from a farm owner having to answer good questions, especially when the discussion brings in fresh expertise and practical insights into what works and doesn't.

Brooks says the members find there is value in being able to openly communicate with people completely disconnected from their own organizations, and who are not intertwined in their family or business hierarchy. This way emotions, ulterior motives, pre-conceived biases or family history are removed from the equation.

Participating farmers can use their peer advisory group as a sounding board, in the same way a large corporation uses its formal board of advisers.

Diversity in this new group may be a little lacking but Brooks hopes they can add some people from different sectors. More importantly, he says they're all successful business-oriented people and regardless of what industry you are in, the objectives of running a successful business are the same.

Furthermore, many different management and leadership styles work effectively so being involved in a peer advisory group, exposes members to styles different from their own.



A key success factor is that members must report on their progress. The discussion is “challenging, not critical.”

TRUST: A CRUCIAL ELEMENT

Betker says most farms send multiple people to meetings. While Brooks attended this new group meeting by himself, Jen has become involved with the CTEAM group. “I think there is value to having multiple people from the operation join the group,” he says. “It only makes sense that more minds will capture more benefits.”

Backswath's groups select the topics of discussion annually, and one group recently started bringing in a speaker for specific topics. So far, the topics have ranged from improving business family communication, to expense reduction, to technology.

At every meeting they sign confidentiality and privacy agreements.

Betker has noticed that after about the third meeting, groups start being comfortable enough to drill down and freely share ideas and information.

Eventually his longest-standing group began adding softer topics to the planning agenda, like how to deal with stress. “Now

it's not all business,” he says. “Sometimes it's personal, family stuff.”

Although peer groups are not intended to act as therapy groups where people commiserate, there can be comfort in knowing that someone else is going through similar challenges, especially when it comes to soft issues. And sometimes ideas on how to resolve these issues are priceless. Other times it's just about affirming what you think might work.

Brooks met a farmer at his first meeting with the Backswath group, before the formal meeting even started. During their chat, he learned of a unique succession plan that the farmer was in the middle of on his farm. It was the same idea that Brooks had been rolling around in his head for their farm in the future. “I had just met someone who would have gone through this before we were ready to even consider moving this way,” he says. “Right then I felt that there would be valuable advice going forward from this producer on this topic.”



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The best two days

Kristi Nylen-Burns doesn't need convincing. "It's the best decision we've ever made for our farm," she and husband Dustin say of their decision to join a next-gen peer group

BY MADELEINE BAERG

How do you calculate your most productive day? If you're like most farmers, you probably count it in rows planted, acres harvested, livestock loaded for market. Wynyard, Sask. grain and oilseed farmer Kristi Nylen-Burns uses a very different measuring stick. She says the most important and lucrative days of her entire work year are spent sitting at a conference table.

For the past four years, Nylen-Burns and her husband Dustin have invested two full days, three times each year, to talk business strategy, best practices, challenges and opportunities with a peer group of individual farmers, farming couples, and father-son partnerships from nine other farms. If you're imagining a group of farmers sitting around coffee-shop style, boasting about farm wins or casually shooting the breeze, think again. Nylen-Burns's peer group, organized and facilitated by Backswath Management, is driven by radical transparency, intensive teamwork, hard work, and — ultimately — results.

"Working with a peer group is the best decision we've ever made for our farm. I definitely want to still be part of it in a decade," Nylen-Burns says. "There are so many

great, really progressive farms doing amazing things. Having access to other farmer's ideas — and reciprocating too — was something we couldn't pass up."

ULTRA-HIGH EXPECTATIONS

Like any successful peer group, Nylen-Burns's group holds each member to ultra-high expectations. Meeting attendance and homework completion are givens. Conversation is intense and intentional: each farmer is highly committed both to the process and to the other group members. Confidentiality is absolute.

The group meets each December and March somewhere urban and central — usually Regina or Winnipeg — and then again in July at one of the group member's farms. Experts on a variety of management topics present at some of the sessions; other sessions are wholly intensive group discussion lead by Backswath Management CEO Terry Betker.

Kristi Nylen-Burns says skilled facilitation is crucial to her group's success.

"It is so easy to get off track, especially if you start talking equipment or other things that people are passionate about. Terry (Betker) keeps us on track. He draws people in. He holds us accountable and sets the professional tone. It would be very easy for the whole process to go off the rails without a strong facilitator."

"The expectation is that if someone shares something that you know they wouldn't want shared outside the group, you don't speak of it ever except with those people. We all agree that if there were a breach of trust, members could be asked to leave the group. That would be devastating since peer group is our very favourite thing to do," she says.

Honesty and openness start on day one; all members understand the group's success depends on members' willingness to really invest in each other.

"There has to be a willingness to be vulnerable with the group. You're not going to get anything out of it if you're not sharing, if you're not collectively working through whatever management struggle you're going through," says Nylen-Burns. "And you have to care. You really have to care about the health of your farm and the health of other people's farms."





Today’s farmers are opening up new territory, with more complex challenges and opportunities, says Nylen-Burns. “We’re all trying to be as professional as we can.”

Farming is complicated. Like most farmers, Nylen-Burns contends with many of agriculture’s biggest challenges (access to land, finding and keeping employees, juggling multiple roles, navigating change) and is working towards multiple business priorities (fostering growth, increasing resiliency, working through succession planning).

Like many in her peer group (and many farmers in general), Nylen-Burns operates a farm that has a complicated structure. She and her husband opened Four Winds Farm in 1998, operating alongside and in co-operation with Windy Poplars Farm, the farm her in-laws (John and Linda Burns) started in 1975 and still operate today. In 2003, close family friends Doug and Bonita Reeve purchased nearby land and added Windy Ridge Acres to

the co-operative business. Five years later, Nylen-Burns’s brother- and sister-in-law, Tyler and Janelle Burns, added a fourth farm — Wayward Wind Acres — to the mix.

The Burns’s and Reeves’ semi-joint business means that, though each of the four farms owns land separately, they manage their land as a whole group, sharing certain infrastructure and tasks, leaning on each other for support, and maximizing efficiencies through teamwork and partnership. Huge positives aside, the structure does add multiple layers of challenge: partners who are in very different life/career stages, a third generation nearing adulthood, a large combined acreage requiring dependable employees, growth/change decisions ahead.

CONTINUED ON PAGE 14

BEST PRACTICES

Nylen-Burns's peer group has helped the couple navigate many of these complex challenges. In addition to learning from peer group members who have walked certain paths before them, Nylen-Burns says one of the most important and helpful tasks the group invests in is designing best practices.

"We are all trying to be as professional as we can," she says. "Everyone wants to come at it from a level higher than just the family farm. When we are challenging each other to bigger and better, there aren't really any industry standards to go by. There's not even policy for that because farming is exempt in so many areas. Employee standards, wages, benefits, environmental practices: we're trying to get those right ahead of mandatory requirements."

Despite being part of her peer group for four years, Nylen-Burns says she is only getting started.

"You can never be on top of professional development. Peer group has driven that home for us. It is so key to be constantly improving, constantly revisiting your plans and business structures."

"People have this idea that farmers go out and drive tractors, and then go on vacation for four months. That's not how it is. Farmers have to be good at so many things. We have to make what we're selling and then be really good at the selling too, and at the HR and the marketing and a million other things. A peer group is so encouraging, so helpful, so inspiring. It has been invaluable to us."



Heads above

Arguably, it has never been harder to climb the ladder to farming success, which may be the best argument yet for peer groups

BY MADELEINE BAERG

Though farmer peer groups aren't yet very common, they are a growing trend among agriculture's most proactive farmers, says Tim Schaefer. Born and raised on a farm, Schaefer now runs Encore Consultants in Morris, Minnesota. In addition to helping individual farmers navigate succession planning and scaling up, Schaefer facilitates groups of farmers from both sides of the border in farmer peer groups.

"Farming has become easier with technologies like RoundUp Ready crops and precision ag. The difference between the really great and the marginal producer has narrowed a lot," he says. "The next frontier in farming is management and professionalism. That's what farmers who commit to a peer group are really investing in."

Peer groups suit progressive farmers who want to grow, agree farmer Kristi Nylen-Burns and Schaefer. In Nylen-Burns's group (see previous story), virtually all participants are in their 30s and 40s, are open to change, and expect to expand in the coming years.

In Schaefer's groups, most of the farmers are top-of-the-heap performers who are becoming limited by the status quo.

"At some point you become maxed out and realize you can't create scale by putting more through one person. So you have to ask: how do I become more of a leader and less of a day-to-day manager?" says Schaefer. "Peer groups have come about because there is increased demand for high-level thinking."

“**Benchmarking is a backwards looking thing,” Schaefer says. “A peer group is forward looking. It’s about building vision.”**

THE FIRST MEETING

Farmers who first start with a peer group usually follow a similar path: mild to moderate anxiety at the outset, then appreciation, then overwhelming commitment to and belief in the group.

“There is always a little bit of trepidation when farmers first meet (at the first peer group meeting),” says Schaefer. “I think the first question is, ‘Who are these people?’ They’re strangers. And then, ‘What am I going to get out of it?’ and maybe ‘How am I going to get out of it?’”

After the first meeting, Schaefer asks participants if the peer group seems to be what they thought it would be. Participants always say no.

“The assumption is that a peer group is just a souped-up coffee shop, unstructured, rambling, full of egos. They realize that’s not it at all,” he says. “What they get out of it is they can see what’s working and not working on other people’s operations. They can see their challenges through a different light, learn from farms that have already cracked some specific nut.”

Schaefer says much of his groups’ time is spent discussing how to be a better employer.

“Employee satisfaction is one of the very top issues we look at with 100 per cent of farms we work with,” he says. “Now and into the future, the biggest hurdle to scaling up will be finding people to do the work in a declining rural population. More and more businesses are chasing fewer and fewer bodies. The farms really scaling up need to have the employee engagement piece dialed in.”

Peer groups can be structured in multiple ways, though most share strong similarities. Kristi Nylen-Burns’s peer group is made up of similar-minded, progressive farmers who grow annual crops (mostly grain and oilseeds) across Western Canada.

Schaefer builds his peer groups a little differently. He groups farmers who share similar challenges even if they work in differing commodities.

“The group we’re starting right now, there’s a dairy operation and an apple orchard in it. The whole point is that they both deal with immigrant labour and they

both deal with end-product food stuffs. You might not initially imagine putting those two together, but there’s commonality,” says Schaefer. “I hear all the time: ‘I’m a grain farmer. I hang around with grain farmers all the time. If I’m going to have a breakthrough idea, I want outside-the-box thinking.’”

THE CASE-STUDY APPROACH

Schaefer’s peer groups meet twice a year, each time at a different group member’s farm. That farmer becomes the ‘Case Study’ for that session. After intensive discussion with multiple members of that farm’s operating (and sometimes extended) circle, the group comes up with five action items that will move that case study’s farm business rapidly forward within the upcoming six months. The formula kick-starts action and enforces accountability.

It’s not just the case study farmer who gains value from the process, however, says Schaefer.

“A lot of the time when we go around the circle offering advice at the end of the session, people will say, ‘I understand it’s hard to have your pride and joy critiqued. As I give you this advice, I want you to know I’m giving my farm the same advice.’”

Discussion topics in an effective peer group should cover all parts of the management spectrum, from business structure, marketing and finance to human resources, strategic planning and succession planning. While farmers should talk numbers too, benchmarking and financial comparisons typically happen less than you might guess.

“Benchmarking against others’ performance is only a small component of a peer group,” says Schaefer. “Benchmarking is a backwards-looking thing that says: this is what happened; what adjustments do we need to make for the future? A peer group is forward looking. It’s about building vision.”

What peer groups should benchmark, however, are things like how many hours a farmer works, the benefits and pay they offer employees, and how many acres they can expect per employee hour: apples to apples comparables that allow a farmer to rethink strategic plans, policy and expectations. **CG**

Are you ready for a peer group?

Could a peer group could be in your future? First, make sure you and your business are ready to take up the challenge.

To be a good candidate for a peer group, you need to be progressive, you need a willingness to invest openly and honestly in the group, and you need to want to grow, says peer group facilitator Tim Schaefer of Encore Consultants in Minnesota.

“It doesn’t have to be rapid growth but you have to be hungry, not mired in the status quo,” Schaefer says.

Numbers aren’t everything in a peer group, but they are important. Therefore, you need to understand your farm’s accounting more intimately than just simple tax accounting.

“You need to know your numbers so we’re not just talking hypotheticals,” he says.

In terms of size, farms with five or more employees typically get the most out of a peer group.

“If you map out all the communication interaction between five people, it is a very complicated path,” says Schaefer. “Acres add complexity but people add more complexity faster.”

Both Kristi Nylen-Burns and Schaefer agree that one of the very most important factors of a peer group’s success is each members’ willingness to prioritize the peer group. Your peer group depends on your input: skipping sessions or investing half-heartedly is not an option.

Cloud farming

The power of deep learning will unlock much of agriculture's future, thanks to enormous potential of 'The Cloud'

BY MAGGIE VANCAMP / CG SENIOR BUSINESS EDITOR

From the ground, cloud technology is a lot like one of those fast-moving, cumulus clouds you see on the horizon in summer. It seems so full of rain, and rain would be great for the crop, but all the while you tell yourself not to wish too hard.

But cloud technology is here. It's happening, and it will create huge opportunities in farming, so we better start to understand a little more.

The cloud acts like an invisible, enormous filing cabinet accessed via the internet. Massive amounts of data can be manipulated and stored there, and it can contain unfathomably complicated programs.

It is much, much more than a cool way to save photos, and it is already changing how we can use data, allowing analytical platforms to organize a large scope of information like never before.

And already the cloud is changing agriculture. Software programs have come on the scene to manage and download farm data from anywhere — data plunked in the cloud and accessible at the office computer, or on advisers' computers.

These platforms allow for software programs to use this data. For example, Affinity software is part of a program called Compass and it allows farmers to do their crop planning, including what-if scenarios, and to figure out which products and inputs to use.

Using the cloud, this particular software holds and can share field maps (not to mention connecting to software systems offered by equipment manufacturers). It can also access soil test information, input prescriptions and treatments and crop records, and it can track crop inventory in the bin.

Importantly, it also has a comprehensive accounting program in it that can link with management information and can then be password-linked with an accountant.

And, because it is a Microsoft software program in the cloud, even if the Affinity company disappeared tomorrow, the whole Compass program would still be there.

What a powerful capability!

Yet the implications of the cloud become even broader when you start looking at how companies like Amazon (AWS), Compute Canada and Microsoft (Azure) have created sort of virtual machines that they provide and look after, with all the software installed ready to use — and all accessible via a web browser.

These very powerful "virtual machines" allow for massive amounts of data to be processed by artificial intelligence (AI, for short, but a new meaning of those two letters for those of us in animal agriculture). They also allow for what's called "deep learning."

Initially released in 2010, Microsoft Azure is one such cloud computing service for building, testing and managing applications and services through a global network of Microsoft-managed data centres.

University of Saskatchewan computer science professor Tony Kusalik was raised on a farm in southern Alberta and he explains: "The idea with MS Azure and similar facilities (Amazon AWS) is that you don't need to download the program, and you can use the cloud for more than just storing the data. You can actually do the computation in that virtual space, the cloud."

There are two ways this can be done. The first is with a program that runs somewhere else (not on your local computer) with software that is accessed through something like a web browser. You don't have to maintain the software to use it. "You simply start up a web browser, go to the website, enter your information, toggle some button, and the software runs on the computer out there," says Kusalik. "Soon the results are available and you can look at them, download them."

The other is through the sort of facility provided by MS Azure and Amazon AWS (and many others) that is more like having your own computer, but not really.

Think of it as a virtual computer that will have a certain CPU, number of cores and a set amount of RAM, just like a real physical computer, although this virtual computer is out in the cloud.

"You can have it pre-provisioned with the software and databases you want, or you can have a basic machine that only has the operating system installed and you provision it with software and upload data," says Kusalik. "Or you can have a 'bare metal' machine where the first thing you do is load on an operating system," says Kusalik. "A purchaser (user) specifies what he or she wants when he or she makes the purchase. But one does all this via the internet and the actual, physical computer supporting it all is somewhere beyond the horizon."

Here's what it makes possible. If you want to use some advanced computer software that requires particular types of hardware or more computing capability than

you have locally, now you can rent the necessary hardware on the cloud for the time you need it.

Kusalik likens it to a situation that other farmers will be able to relate to. He has a small trailer for hauling lots of the things he often has to haul, but then he purchased a used tractor in the Medicine Hat area and needed to get it to Saskatoon.

He has three options. He could buy a nice tandem axle trailer and go get the tractor himself. Or he could hire a trucker to pick up the tractor and transport it for him.

But there was also the third option. He could go to his local Flaman dealership and rent a tandem axle trailer. "I'll hook up the trailer to my pickup, drive down to Medicine Hat, get the tractor, and when the tractor is safely here in Saskatoon, I'll take the trailer back to Flaman and say 'thank you,'" Kusalik says, adding "There's a few details I'll need to take care of, such as making sure that I have the correct trailer connectors on my pickup to connect to the wiring in the trailer."

He will also need to treat the trailer carefully, just like it was his own equipment, and he'll have to be sure he picks the right trailer, so it has the capacity to carry the tractor, "but isn't overkill."

Cloud computing services provided by MS Azure and Amazon AWS are like this last option.

Currently, these cloud-based computing services are exceptionally expensive and so are relegated to research and leading-edge companies. But Kusalik says it will likely get progressively cheaper, until the point when a farmer could go into an equipment dealership and be given or buy this service when they purchase a combine, says Tony Kusalik. "Typically, the issue is getting the data up to this platform," he says.

For now it's helping scientists like Kusalik learn new ways to help farmers feed the world.

This past summer, president and chief legal officer at Microsoft, Brad Smith, announced that the company is broadening its AI for Earth program with an expanded strategic plan and committing \$50 million over the next five years. The goal, via Microsoft Azure, is to put artificial intelligence (AI) technology into the hands of individuals and organizations working to protect our planet, so agriculture is a big part of it.

With its mandate to improve and expand work on climate change, agriculture, biodiversity and/or water challenges, AI for Earth is trying to help monitor, model and manage the earth's natural systems. "Building on cutting-edge work in Microsoft Research, we'll help farmers put AI to work not only to better analyze soil and rainfall conditions, but also to use predictive analytics to improve agricultural yields and reduce adverse environmental impact," says Smith's announcement. "With the world's population continuing to grow, these changes cannot come fast enough."

So far, Microsoft has sponsored over 36 selected researchers and organizations and given them access to its cloud and AI computing resources. In Australia, AI



It's way more than a cool place to store your photos. Thanks to the Cloud, Kusalik says, farmers will soon be integrating their entire operations, from seed purchase through year-end financials, making better decisions at every step

for Earth has already helped Tasmanian ag-tech company The Yield create a system that uses sensors, analytics and apps to produce real-time weather data, right down to field level.

The idea is to help growers make smarter decisions that can reduce their use of water and other inputs while also increasing yields.

"As we look to the future, we're committed to working with farmers around the world," says Smith. "We envision a future with broadband connectivity for every farm, and internet sensors for every acre of land."

This past fall, two University of Saskatchewan computer scientists were selected for these grants, valued at \$10,000 each. The research teams also are allowed to use the latest Microsoft technology to create new ways to analyze plants and automatically identify traits related to

CONTINUED ON PAGE 18

plant growth, health, resilience and yield. This will help researchers better analyze plant genomics associated with crop traits, such as flowering time, yield, and resistance to stress from drought.

Kusalik and Ian Stavness, associate professor in the University of Saskatchewan's department of computer science, will get access to various kinds of virtual machines from MS Azure, some with an operating system and various useful software packages installed, and some bare metal machines they can populate with software.

Stavness will use Microsoft Azure cloud computing resources to create new ways to analyze images and videos of plants and crops. The AI capabilities will allow the team to automatically identify traits related to plant growth, health, resilience and yield.

"Having a computer recognize these traits has potential to increase speed, reliability, and precision of trait identification and will provide new opportunities for crop breeders and farmers to directly compare large numbers of individual crops with differences in genetics, growing environment and crop management," says Stavness.

Kusalik has been using Compute Canada services

and is trying out other platforms, including Azure. His team's goal is to uncover the relationships between plant genes and desirable traits. "We hope the new Azure AI cloud computing platform will help us to enhance deep learning to recognize complex patterns in plant genes so that we can find desirable ones," says Kusalik. "Finding the links between plant genes and favourable crop traits will help breeders speed up their breeding programs."

This "deep learning" will find associations between genetics and performance in the field, says Kusalik.

It's also enabling and improving the process behind scientific research like plant breeding. With access to Azure they'll be able to test more graphic processor units so they can evaluate which kind works best. They will also be able to figure out how to set up bare-bones virtual machines faster and as easily as possible. "This means in the future a student can walk in with an experiment and in 10 minutes the very complicated program will be ready to go," says Kusalik.

Improving the processes should eventually play out in better and more availability of cloud-based

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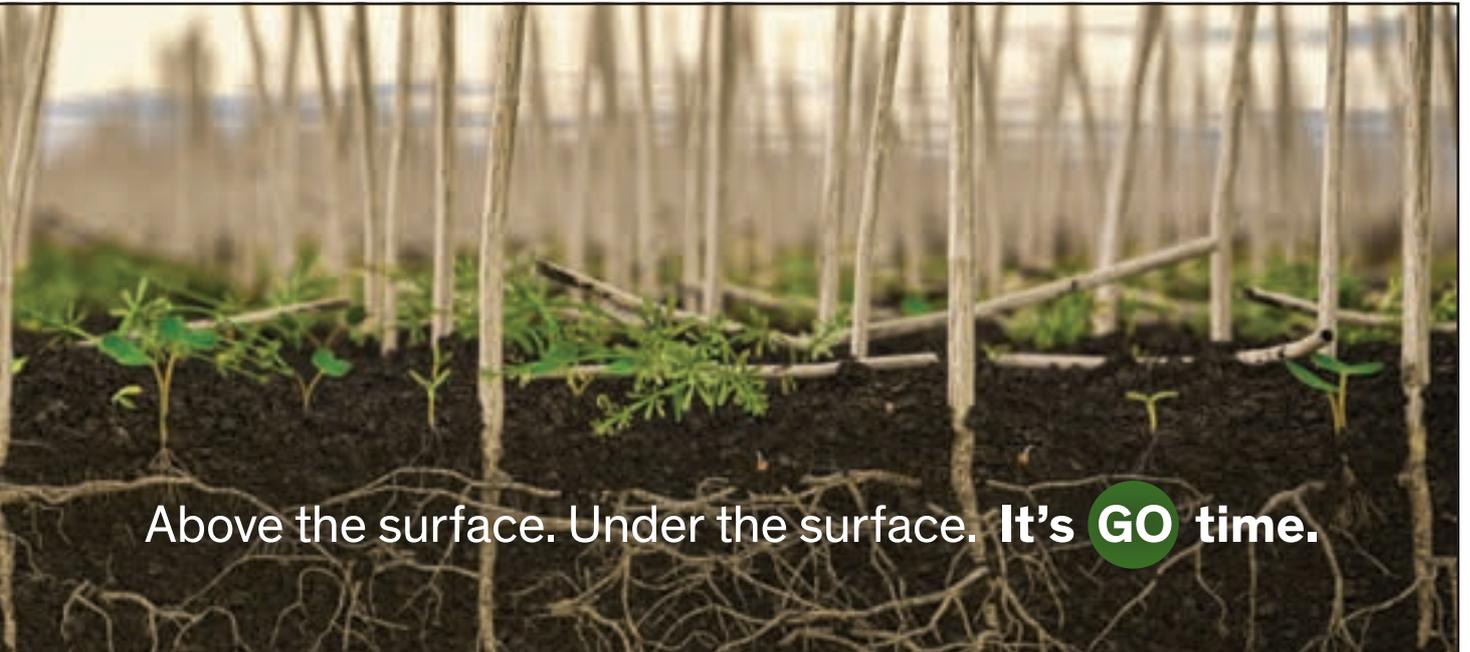
With a Microsoft grant, Stavness will explore how the Cloud and the new science of deep learning will speed up productivity gains on the farm

programs and information. And eventually, this type of computing power will become more affordable and accessible. Theoretically, a farmer might someday be able to walk into a John Deere dealership and along with the equipment will have a long checklist of what's available computing-wise and get it right there, says Kusalik.

Kusalik, Stavness and their teams of researchers, post-doctoral fellows, graduate students and undergraduate research assistants are part of an innovative research and training program at the Plant Phenotyping and Imaging Research Centre (P2IRC) that is working to transform crop breeding and

provide innovative solutions to national and global food security. The university's P2IRC is managed by the Global Institute for Food Security (GIFS) and is funded by the Canada First Excellence Research Fund.

GIFS research is focused on three areas, namely seed, root-soil-microbial interactions, and digital and computational agriculture, with the underlying focus to not only do research for developed agriculture but to help find solutions for farming in underdeveloped countries as well. Founded by PotashCorp, the U of S, and the Government of Saskatchewan, GIFS has attracted over \$100 million in funding to date. **CG**



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You're the 'leader'?

BY LISA GUENTHER / CG FIELD EDITOR

No one would really question whether any farmer serving on a commodity or other type of farm board might need some leadership skills. After all, that's what those farmers are doing, right? They're being farm leaders. The same goes too for any farmer who manages a large operation with multiple employees. Obviously, if they've got a staff, they're leaders too.

But what about a partnership run by a couple of brothers or cousins, or a typical operation where Mom and Dad are partway through transitioning the decision-making authority to the next generation?

Or, to get right to the point, what about a solo operation? Are they leaders? And will they get a payback from working on their leadership skills?

Denise Filipchuk thinks the answer is yes, at least to a certain extent. As a Backswath Management farm consultant based out of Swan River, Man., she works with farmers on everything from financial analysis to strategic business planning.

Filipchuk's clients include crop producers, mixed farmers, and farmers with value-added businesses such as seed cleaning plants, seed growing, or trucking. Some of those farms have one leader, she says, while many have small management teams.

Today, she says, all of them are pushing their thinking to a CEO level.

THE TEST: DEVELOPING A VISION

It might seem counter-intuitive at first, but it turns out that on a small farm, effective leadership can be even more crucial because every member of the team is so important, and it's so important to have them all focused on the same end point.



Leadership skills can be even more important on small farms, Denise Filipchuk says, because it's so crucial that everyone works toward the same goal

Even if you farm on your own, these CEO strategies will make your operation more successful, and more sustainable too

You can't rely on that happening on its own, Filipchuk says, because each member will operate independently to some extent, and take responsibility for part of the overall operation.

Similarly, Anne Van Delst, an accountant and partner with Ontario accounting firm GGFL, sees leadership as key to making the right decisions for the farm, no matter the size of the management team.

Van Delst grew up on a dairy operation in eastern Ontario so she understands not only the terminology her clients use, but she also understands the family dynamics and the overriding need to get the work done.

"I've milked a cow. I get it," she says.

Farming is more complex these days, technology is more integral, and there's a lot more to know, Van Delst says. But there's an extra pressure too: the farm leader's vision of where they want to go needs to be integrated throughout their decision-making.

"All the decisions have to tie in together. You can't make a decision in isolation," she explains.

Filipchuk agrees that a vision is important, whether the management team is one person or five. That vision helps a farmer achieve goals, both short and long term. It's also important while making day-to-day business decisions, along with larger decisions, such as capital purchases.

Without that vision, even the leader can get sidetracked, Filipchuk says.

Some clients do wonder, though. Does a farm need a vision? Isn't it obvious... you grow a crop and sell it, you raise an animal and sell it. Who needs a vision for that?

Filipchuk knows that creating a vision can seem like something that only large corporations do, or something that doesn't pertain to agriculture.

But experience teaches her different. She gets farm management teams started by having a goal-setting discussion that includes everyone actively engaged in the farm.

"Talk about your personal, family, and business goals," says Filipchuk. Farm transition planning needs to include non-farming people as well, she adds.

Out of that discussion, the point is to agree on a strategic direction for the farm, and then create guidelines to help them make decisions as needed.

Farmers might create a formal vision statement, but it's more likely to be contained in a few different documents, says Filipchuk. As long as everyone knows what the vision

is, and can refer to those documents, she doesn't necessarily have them create a formal vision statement.

THE TEST: FINANCIAL STRATEGY

Farming is a business that requires a lot of advance planning, says Van Delst. In any given year, farmers need to think about how many heat units they can expect, what they'll plant, how they'll get the crop off the field, whether they'll dry it, how much they'll store versus deliver right away, and how much they'll forward contract.

"All of those decisions can impact your bottom line, so it's a lot more complicated than it used to be," says Van Delst.

Like any business owner, farmers are constantly looking for ways to improve their bottom lines, Van Delst adds. Cash-flow budgeting is an important part of that.

For example, what will cash flow look like if the farm takes on more debt for a

land purchase? Will the revenue from next year's cropping plans cover that new debt and other expenses?

Ideally, there should be room for emergency expenses, and one way to make that room is to start by estimating a conservative revenue stream. By using a base minimum to calculate expected revenue, a farmer can leave some margin for unanticipated expenses, Van Delst explains.

Another strategy is to tuck money away during good years. Farmers can use AgriInvest as an emergency fund, Van Delst says.

Farmers can also cover some risk with programs like AgriStability or crop insurance. "Things can get tossed at farmers that they have no control over, and weather's the key one," says Van Delst.

In short, there can be multiple options for your financial management, but choosing the right overall strategy involves understanding the mix of risks and opportunities that is unique to your farm.

In other words, it takes a kind of executive-level assessment of your business, followed by a determination to use that assessment for making consistent decisions.

THE TEST: BUILDING THE TEAM

Of course, many farms these days are managed by a team, usually made up of family. One person might be in charge of finances, another agronomy and marketing. So how can the farm leadership group make sure they're all on the same page, even as they take the lead on different aspects of the farm business?

It really is all about communication, according to Van Delst. At its core, it isn't about reporting to one person, she explains, but about working as a team to accomplish what you've set out to achieve.

"If they're not communicating,

CONTINUED ON PAGE 22



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they're not going to run this business effectively," says Van Delst.

Both Van Delst and Filipchuk recommend management meetings. Although they are not as common in farming, they are standard in other businesses, Van Delst points out. She suggests holding them regularly — for example, over breakfast. The management team should discuss their plans. At one meeting, the agronomy lead might, for example, talk about cropping plans and expected yields, so the financial person can budget, Van Delst says.

"It's a lot of integrating and working together. Neither one can really work in isolation," says Van Delst.

Filipchuk says management teams should establish a format for receiving feedback in a respectful, safe environment. Everyone should agree that the intent of the feedback is positive, she adds.

Farm management meetings might include the farm management team only, Filipchuk says, or the team plus a consultant.

Larger management teams might find specific meetings, such as an agronomy meeting, especially useful, says Filipchuk. Meetings focused on one aspect of the farm business keep everyone up to date and allow others to ask questions, she adds.

**THE TEST:
GOOD INFORMATION**

Van Delst also suggests doing financials on an accrual basis, even on farms that use a cash system for filing taxes. It's an important leadership function, she says. Good leaders insist on good information.

"You need relevant, current information. And that really is an accrual set of financial statements where you're accurately able to compare year over year," says Van Delst. Accrual-based statements will also better capture the true costs involved in producing a crop.

Of course, to manage finances effectively, farmers need current information about the operation. That means someone needs to do the books regularly. But finding a family member with the skills or desire to manage the finances is often the hardest thing, says Van Delst, which is why so many farmers hire out bookkeeping services.



Good leaders insist on good information, says Anne Van Delst. They also set measurable goals, and they do annual reviews so they really know how they're performing against those goals

In fact, for anyone who wants to be part of the farm, it's important to find the right fit for their skill set, Van Delst says. Farm leaders need to make sure that everyone is leveraging their strengths, so they enjoy what they're doing and feel like they're contributing. Farms that do this well will also have more success integrating the younger generation into the operation, she adds.

**THE TEST:
EVALUATE YOUR OWN PERFORMANCE**

How do you measure up as a leader?

Fortunately, there are concrete ways to gain insights into your performance, where the end result might suggest a slight course correction, or the addition of new skills.

"A SWOT analysis is a very helpful tool," says Filipchuk. SWOT is an acronym for Strength, Weakness, Opportunity, and Threat. It's a process for evaluating those facets of a business. It's useful to identify the risks to the farm, discuss them, and get everything down on paper, Filipchuk says. "Because it's really hard to deal with risks if you haven't even identified what they are."

Filipchuk says when working with producers, they start by identifying risks. They then look at their strengths, and how they can deal with the risks.

They also look at where the farmer needs help from others. Most people aren't good at everything, she points out, but everyone is good at something, and it's worth identifying areas where assistance is needed.

How do farmers know if they're doing a good job managing farm finances? Van Delst says farmers should have a good idea of where they stand, what they've got coming in, what they need to cover each month, and how much cash they'll have at month's end. Being constantly worried about money and paying bills is a red flag, says Van Delst.

Van Delst also acknowledges that things won't always go as planned. But the farm financial managers should correctly anticipate what's going to happen more often than not. And they should have the resources and plans to handle the bumps, she adds.

"A management assessment is another great tool to get that discussion started and get them thinking about what they're doing well, what they're having challenges with, what they don't even know about, and what they can start asking and getting more information on," says Filipchuk. From there, if the farm management team needs help in a certain area, they can start looking for individuals to help them.

**THE TEST:
THE ANNUAL REVIEW**

How can a farmer know if they're leading the farm in the right direction if they're the sole farm manager? Filipchuk says annual reviews are a good way to see if the leader is on track and whether the leader's decisions are taking the farm in the right direction.

An annual review should include financial and non-financial targets, Filipchuk says. “Once you’ve set some financial targets and some non-financial targets, then you’ve got something to measure against.”

To discourage procrastination and get an outside opinion, solo farmers can work with an adviser, Filipchuk adds. An adviser can have that straight talk and keep the client accountable.

Van Delst suggests reviewing past results. For farmers working alone, a peer network, agronomists, or ag business advisers can help. Farmers shouldn’t be afraid of asking questions, learning something new, or even verifying something they already know. A farmer’s specialty is running the agribusiness, says Van Delst. But there’s so much to know in agriculture, it’s hard for one person to know it all.

There’s a good chance advisers have already seen the situation you’re facing, says Van Delst. “And they probably have suggestions you’ve never thought of.”

Van Delst recommends building relationships with key business advisers such as investment advisers, bankers, lawyers, and accountants. She also suggests less traditional advisers such as coaches for business plans, peer networks, and programs such as Canadian Total Excellence in Agricultural Management (CTEAM).

How can farmers make sure they’re working well with their advisers? Van Delst says a farmer should make sure they can trust their adviser. The adviser should understand the farmer’s business, and provide the information that she will need for their review.

“There should be regular communication. There should be discussions. So when you have a question, they understand what you’re doing and why you’re doing it,” says Van Delst.

Filipchuk says farmers should work with someone they’re comfortable with, and who specializes in the area they want to work on. The time commitment, documentation required, and cost for services should be clearly outlined in an engagement letter, she adds. If there is no engagement letter or the information is fuzzy, “then that might be a red flag that that’s not the right person for you,” says Filipchuk.

Consultants are there to help their clients decide what success looks like to them, and figure out what they can do to be more successful, says Filipchuk.

“It might be financial management. It might be work-life balance,” Filipchuk says.

Farm management teams should also be prepared to listen to things that they don’t want to hear, says Filipchuk. They

should be ready to make changes to foster success, even if it’s hard.

And remember, says Filipchuk, “Be committed to being actively engaged in that process.” **CG**



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What farm women say...

With all the #MeToo headlines about predators and creeps in entertainment and government, and with so many revelations about fair pay and fair treatment, we wanted to ask, how is agriculture doing? Here's how it looks from the front lines



BY LISA MCLEAN

As remarks go, it was decidedly crude, so even though it was some years ago now that she first heard it, the memory still rankles Beth, especially because she's so much more aware now how it fit into a pattern.

The day had been a workday like any other in any professional agricultural office. There were back-to-back meetings and deadlines, and Beth had also managed to connect with a business contact who had information that was essential to a project she was working to complete.

On the call, Beth took good notes and asked educated questions. When she was finished, she closed her notebook.

"Thanks," she said. "I owe you one."

There was the briefest pause on the other end of the line.

"Just wear a nice, tight sweater to the next meeting," the man said. "That's all the payback I need."

Beth also remembers how she felt around her col-

league after that. More than once she heard him brag that his company had sent him for sensitivity training a few times.

"But," he chortled, "it never stuck."

"He is a powerful person in the industry, and I felt uncomfortable when he would look me up and down in meetings," Beth says. "Sometimes he'd say, in a sleazy way, 'you're looking really good.'"

Today, I still have to conceal Beth's name to protect her from the consequences, so when I hear her story, I ask, as an industry, have we moved beyond that kind of behaviour?

Sometimes it seems the answer is yes. Sometimes it's not even close.

Today, Beth is a successful executive in a small Ontario-based seed company. Encounters like the one above didn't keep her down for long, nor have the other negative experiences she's had along the way.

Still, when she's standing alongside a male farmer who says about a new female sales rep, "she's good



“The organizations that figure it out are the ones that win,” Jen Christi (centre) says about agriculture’s track record on equity from her national platform in *Chatelaine’s* “Broads in a Bro’s World.”

looking — I’d let her on the farm,” it’s a reminder that for some men, a woman’s professional credentials take a backseat to the value of her physical appearance.

Beth still cringes when she thinks about the hours she had to spend while driving to meetings so she’d have some responses prepared for a particular man who would be there and who often made comments like, ‘you need to find a husband so you can buy a house’ or ‘did you come to make us lunch?’

She would rather have spent the time thinking about sales strategy, or working on what she needed to do to make the meeting successful and productive.

“Instead,” she says, “I was worried about how I would interact or deal appropriately with this man who made a point of making me feel like I just wasn’t welcome in the industry.”

And then there are the clients. Beth recalls a meeting her entire sales team once had with a farmer who was important to the company’s business. At dinner, and throughout the evening, the client made multiple advances toward Beth’s female colleague. No one on the team knew how to react.

“I find it’s the small, unremarkable pieces of sexism that build up over time... they weigh on me until it feels insurmountable,” Beth says. “I never officially reported any of it because I felt like I wouldn’t be taken seriously, and it wouldn’t change anything. I didn’t want a reputation that I was difficult to work with.”

Beth, like most people interviewed for this article, reported largely positive working relationships with the males in their professional circles. But everyone interviewed could also refer to a time when a boundary was crossed, when a person’s gender was a factor in a challenging situation.

“Women should succeed in this sector because they have the necessary skills and experience, not because they’re strong enough to endure the sexism,” Beth says.

HOME ON THE FARM

Mary worked for more than two decades in crop protection before deciding to partner with her husband on the family farm. They’ve divided duties evenly, and they’re equally responsible for running the business. Mary handles the agronomy. She also manages the operations at the storages, including staff.

“I’ve always known agriculture is a male-dominated industry, but I’ve never felt the level of sexism on a daily basis until recently when I’ve come to the farm,” Mary says.

Last year, Mary investigated a downed power line

while her husband was in the planter. But when the hydro worker showed up for repairs, he insisted he would only speak with Mary’s husband, even after she told him he had no knowledge of the situation. When she reported the conflict to the utility, the supervisor claimed it was her word against the worker’s.

It’s the same with a man who once came to the farm looking for a job, confessing to Mary’s husband he hates working for women before he realized Mary was an active manager on the farm.

Or the gravel delivery that showed up and the driver walked past her in search of her male employees to ask where to dump it (“as if I didn’t know where the mud was,” she laughs). Or the suppliers who host customer suppers to talk business and offer separate “entertainment” programs that the wives are expected to attend.

“It’s discouraging and it’s very frustrating,” Mary says. “Farming is hard work, and often there’s an additional step in having to tell people that I’m in charge, or that they should come and talk to me. We’re farther behind than I previously thought. I feel like we’re lagging behind as an industry.”

Mary acknowledges there’s still a perception that if there’s a woman on the farm, she’s probably doing the bookkeeping. But she says there are plenty of women in her region who, like her, have more active roles.

And although she knows that for some men, those gender assumptions are sort of honest mistakes, and they only need an “ah-ha moment” to make them realize what they’re saying, for others, sexist attitudes toward women are more ingrained, and the offensive behaviour is intentional.

“Before now I’ve never really felt the need to empower women to speak out in this industry, but I’ve changed my mind,” Mary says. “There’s a need to bring this to the surface. We need to start bringing these issues up. My husband and I need to make a personal decision to do that, to establish how we handle these instances moving forward.”

Cattle rancher Laura agrees sexism can be a problem on the farm for some women. She notes family operations can be particularly challenging, because there’s no human resources office to set and enforce guidelines or to offer solutions.

Laura is an equal partner in her family’s operation, and she says there are steps she takes to ensure her role is clear. For example, when she and her husband start working with a new supplier, they make a point of attending meetings together to establish an equal platform.

CONTINUED ON PAGE 26

Laura also knows, though, that she was fortunate to join a family where work has been divided equally for decades. “My husband’s parents both cook in the kitchen and pull calves together,” she says. “That’s been their life, so my husband’s mindset is similar.”

But before coming to the ranch, Laura had had a career in agricultural marketing. “Sometimes I was the only woman in the room. I had to get used to that, and I think it’s better all the time with more at

the forefront of agribusiness, not only in the boardroom but leading on the farm as well,” she says.

In that process, however, men can also find it difficult to know how to help agriculture make the transition.

In Southwestern Ontario, for instance, Derek was a kid growing up on the farm in the ’70s, ’80s and ’90s, going along to farm meetings with his dad. He says the speakers always seemed to start with a crude joke. A blonde joke, a racist joke. Often there was a punchline

about a guy in a turban. It was only when he took a provincial farm leadership position that he said a light bulb came on.

“People in power positions in agriculture are so often old white men,” Derek says. “I’d hear a joke or a comment, and think ‘What would a woman think of that? What would a young person think of that? What if we didn’t tell these jokes? Would different kinds of people be more comfortable here?’”

Recently, Derek was in a senior management position with a national company. His

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team included several men and one young woman with a professional marketing function. He says he worked closely with the female staff member. They regularly traveled to meetings together, and he valued their professional working relationship.

But Derek's female colleague was regularly disrespected by one member of the team. Comments were heard or reported on her behalf. The disruptive team member often suggested she fetch the coffee or sandwiches. She should take the notes and do

the photocopying. Derek learned this wasn't the first time the man had caused problems with female colleagues.

"I spoke to her about it, and I spoke to my manager," Derek says. "In the field we put up with a lot of crap. I had to ask myself, 'Would he say this to anyone? Or is he saying it because she's a woman?'"

Eventually, the situation escalated and Derek tried to file a formal complaint. He was not supported in his plan to terminate the problem employee. Then rumours

began to circulate at the company, suggesting that Derek and the female employee were involved in a sexual relationship.

"It was embarrassing and devastating for both of us," he says. "It wasn't handled very well, and I respected my employee's wish not to pursue legal action. It's a small company, in a small community where it's difficult to find a professional job at her level."

CONTINUED ON PAGE 29



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What the law says

What is your responsibility for preventing abuse or harassment on your farm?

Whether you're a manager at a large corporation or you own a farm business that hires a small cohort of staff, you're obligated under the law to provide a harassment-free workplace, says Cherolyn Knapp, a partner at Guelph-based law firm, Nelson, Watson LLP.

Specific statutes vary from province to province, and links to relevant pieces of legislation can be found through the Canadian Agricultural Human Resources Council (CAHRC) at <https://www.cahrc-ccrha.ca/>.

In Ontario, for example, all workplaces are required by the Occupational Health and Safety Act to have workplace violence and workplace harassment policies that target any kind of harassment and bullying. Businesses that don't have policies can be ordered to make them, and fined for not having them.

Provincial human rights legislation also protects employees from discrimination and harassment based on sex or gender.

"If any person is subject to harassment in their job, they can go back to their employer and say 'I'm being harassed. Help me.'" Knapp says. "There is no exemption for a family-run business like a farm."

Knapp says employers should have a policy statement that states discrimination and harassment are not permitted in the workplace. Accompanying that policy should be a procedure that outlines step-by-step instructions if an incident has occurred. Who is responsible to receive complaints? What if the complaint is about that person — who is the alternate contact? What is the format to make a complaint? Most importantly, how is the complaint going to be investigated?

"By having policies and procedures in place, everyone knows what to do," says Knapp. "The other important piece is training and documentation, which conveys to everyone the employer takes these things seriously."

Knapp says in Ontario, a person who is being harassed has the option to bring an application to the Human Rights Tribunal of Ontario (HRTO). The person does not need to have lost employment to take this step, though Knapp admits it can make a situation awkward.

According to HRTO's website (<http://www.sjto.gov.on.ca/hrto/>), "The HRTO first offers parties the opportunity to settle the dispute through mediation. If the parties do not agree to mediation, or mediation does not resolve the application, the HRTO holds a hearing."

"If you have an employer who has a known problematic employee and they have license to harass and sexually harass, that's not fair," Knapp says. "The other employees are left to either try to work elsewhere or to hold the employer accountable."



“There is no exemption for a family-run business like a farm,” says lawyer Cherolyn Knapp. In other words, if you’re an employer, you need anti-discrimination and anti-harassment policies

Knapp says if she was advising a complainant, she would have a long talk about what they hoped to accomplish. If the employee has decided the workplace is too poisonous to continue working there, they may seek damages for lost wages as well as damages for discrimination. Often HRTO will order the workplace put human rights policies into place.

Knapp says it's important to take the impact of sexual harassment seriously. It has taken effort to raise awareness among people who are not normally the target of that kind of treatment so they understand its impact.

"A lot of people have complicated pasts," says Knapp. "We should never underestimate the impact our words and deeds have on others."

WHY DIVERSITY MATTERS

In 2017, Jen Christie gained national media attention when she participated on a panel, “Broads in a Bro’s World” at the Chatelaine Big Dish, a Toronto-based event for women in food.

As founder of the Ontario-based grassroots organization Ag Women’s Network (AWN), Christie says supporting women and helping them overcome sexual harassment and discrimination are important objectives.

Christie also says the #metoo movement has motivated AWN to begin developing more tools to address problem areas.

“For the industry as a whole, AWN sees itself as one of the groups helping to address issues that limit diversity,” Christie says. She sees a role for AWN to develop more resources to help individuals who have been victims of discrimination and as resources for bystanders.

AWN hosts events that are open and of

interest to men and women. Recent topics include work/life balance and speed mentoring. In 2018, they’ll host a session on board readiness and they are exploring anonymous forums to discuss these more sensitive topics.

“As an industry we talk a lot about how we need to innovate, and our potential to be the number two agricultural exporter in the world. But how do we get there?” Christie asks. “Innovation comes from diverse teams, and from taking advantage of everybody’s talents and of the perspectives that they bring to the table. Ag businesses and industry groups that limit diverse participation are going to be at a disadvantage.”

Christie notes the federal government’s new Canadian Agricultural Partnership also includes a funding stream to strengthen diversity.

“Creating a culture that embraces diversity and differences of opinion is hard work

and takes effort and focus. The groups that are working on this already will tell you it’s not easy, but it’s worth it” she says. She’s also quick to point out that diversity comes in many forms, and there’s room for everyone.

“Our industry is full of people who didn’t grow up on farms,” Christie says. “Once they start working in agriculture, they love it.”

“Creating a culture that embraces diversity and differences of opinion is hard work and takes effort and focus. But the organizations that figure it out are the ones that win. They’ll attract the best talent and have the greatest success.” **CG**

Author’s note: Some names have been changed for privacy reasons. Thank you to the people who trusted me with your stories to explore this issue. #MeToo.

Lisa McLean is a professional freelance writer specializing in agriculture. She lives in Guelph, Ont.

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Call it when you see it

You're on the farm and someone makes an offensive joke or statement. What do you do?

Be ready, says Guelph-based lawyer Cheryl Knapp. Whether you're male or female, you may succeed with a response that is quick and to the point.

"Those of us who work in male-dominated fields know what it feels like to walk into a meeting and brace for the next awful comment," Knapp says. "Unfortunately, we're so uncomfortable when it happens that we're wracking our brain to crawl out of a hole to get out of the situation."

So, Knapp says she's been practising naming harassment when she spots it in her own life, and addressing it directly: "Oh I see. You're trying to sexualize me to put me off my guard." Or "You're suggesting I make the lunch because you're intimidated by me in the boardroom."

As a tactic, addressing behaviour before it escalates can be effective, says Debra Pretty-Straathof, a director on the Ontario Federation of Agriculture. She says over the years her experiences with male colleagues have ranged from benign to ridiculous. She has come to

think of the men who serve on the board with as her brothers and uncles, and banter is part of being on the team.

Still, it's strange how a comment like "Here comes our token woman" can affect not only your opinion of the person saying it, but it may have the effect of shifting the way you relate to your other male colleagues until you can shake it off. Sometimes that happens quickly but other times it sticks much longer.

"It's not always black and white," Pretty-Straathof says. "I usually shrug off something another person might take great offence to. I try to consider the source and the circumstances. Sometimes 'That's not appropriate' is all it takes to wake someone up."

"Sometimes all it takes is a little awareness."

Pretty-Straathof recognizes not everyone has the confidence to speak up. She says it depends on where a person is in her life, and how she's feeling about herself.

But she says it's important not to make excuses for anyone else's behaviour.

In agriculture she's had to address harassment with a peer only once in a serious way. "I pulled someone aside and said, 'Look, you're a good guy, but some of your inappropriate comments have been overheard, and that's not going to help you any,' and a light bulb came on," she says. "He just didn't realize how it would be perceived. I thought, 'I could do this guy a favour and say something or I could let him sink.' Sometimes a private conversation is all it takes."

Pretty-Straathof notes it's common for boards to take training to communicate with government representatives — why not work on developing tools to communicate with each other?

"I don't think we have the language to address gender issues in a productive way," she says. "A little coaching on how to address it calmly, how to communicate with each other as colleagues, might benefit a few people and save a lot of angst."

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CROPS GUIDE



Rapeseed production in China increased from just under 400,000 tonnes in 1961 to 15.3 million tonnes in 2016.

Why China needs canola imports

China has been growing rapeseed for millennia and has seen a rapid increase in productivity over the past 50 years. Even so, production can't meet demand

BY JAY WHETTER / CANOLA COUNCIL OF CANADA

Brassica rapa plants have contributed to Chinese cuisine for millennia. “The Book of Songs”, an ancient collection of Chinese poetry, includes one 3,000-year-old poem, Gu Feng, which specifically mentions the plant.

In this English translation, Brassica rapa is called “mustard plant.”

*Gently blows the east wind,
With cloudy skies and with rain.
Husband and wife should strive to be of the same mind,
And not let angry feelings arise.
When we gather the mustard plant and earth melons,
We do not reject them because of their roots.
While I do nothing contrary to my good name,
I should live with you till our death.*

Zhang Xuekun referenced this poem at the first Canola Dialogue in Beijing in November. Zhang is deputy director and professor at the Oil Crops Research Institute in Wuhan, China. The Dialogue, which brought together Chinese and Canadian industry and government leaders, was designed to talk about regulations, demand and opportunities, and to create the relationships necessary to deal with any issues before they become trade barriers. At the Dialogue, Zhang spoke about rapeseed use and production in China.

Through centuries of breeding, B. rapa has given rise to the root vegetable turnip, the leafy vegetable bok choy and seeds high in vegetable oil. Chinese farmers began growing B. rapa for oil in 200 A.D., and started frying food in oil in the 10th century.

“Rapeseed is the most important oilseed crop in China,” Zhang says.

Advancements in agronomy and genetics have improved production considerably over the past five decades or so. Rapeseed production in China increased from just under 400,000 tonnes in 1961 to 15.3 million tonnes in 2016, based on United Nations Food and Agriculture Organization (FAO) statistics. This rise was driven by a fivefold increase in acres and an almost eightfold increase in yield over that time. Rapeseed harvested acres in China were just under 19 million in 2016, according to FAO stats. Average yields in China are now about the same as Canada's.

Chinese farms and fields are still mostly very small, which limits opportunity for large-scale mechanization. Rapeseed is often grown in a triple-crop system with two crops of rice and one crop of rapeseed on the same fields each year. Some larger farms have adopted mechanical seeders and 30 per cent of acres are now combined, even though a lot of farms still seed and harvest small fields by hand, Zhang says. Slow-release fertilizer and herbicides are seeing increased use, he says.

Jiang Lixi, a professor and rapeseed genetics researcher at Zhejiang University in Hangzhou, China, spoke during Canola Week in Saskatoon in December. As Jiang described, China's rapeseed crop is 90 per cent winter varieties with production centred in the Yangtze River Basin. B. napus varieties now account for 83 per cent of acres, with B. rapa at 10 per cent and B. juncea at seven per cent.

Jiang says major genetic improvement started with the shift from B. rapa to B. napus, and introduction of the first commercial hybrids in 1985. Jiang is part of a Chinese initiative to further increase rapeseed yield and oil content through genetics.

Another important factor Jiang adds, was political reform. Over the past 50 years farm structure moved from a communal system to individual family-run operations, which he says helped motivate farmers.

CONTINUED ON PAGE 32

ROOM FOR IMPROVEMENT, BUT CHALLENGES

A new high-resolution map from the United States Geological Survey (USGS) calculates global arable land at 1.87 billion hectares. China has 8.8 per cent of that cropland — which is huge — but China also has 18.7 per cent of the world’s population.

What’s more, Zhang says total arable land in China is shrinking and production is not increasing. FAO stats indicate that rapeseed production has flattened over the past five years. United States Department of Agriculture Foreign Agricultural Service (FAS) statistics on Chinese rapeseed production (which are lower than FAO figures) show a drop over the past three years.

Yet, as Zhang described at the Dialogue, China’s 10-year plan is to see a 10 per cent increase in rapeseed acres and a 25 per cent increase in rapeseed yield to achieve total annual production of 18 million tonnes.

Is this possible? With the three-cropping system for most production areas, the rapeseed season is capped at around 165 days. This will keep China from achieving the high winter-rapeseed yields of Germany and France. Further mechanization is likely, but this is limited when rapeseed is produced in tiny rice-paddy fields, Jiang says.

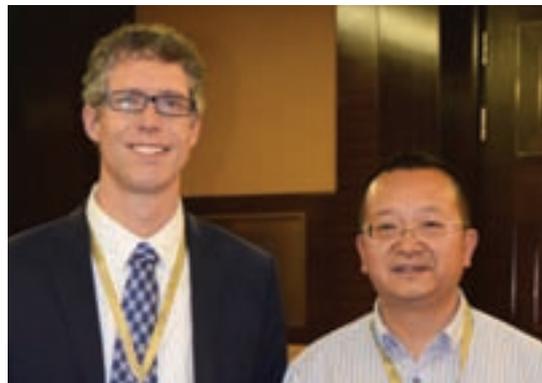
China also has another national policy to be self-sufficient in wheat, corn and rice — the big cereal staples — which may limit any major shift in acres.

Imports will continue to fill the gap between Chinese supply and demand. Zhang says China has a vegetable oil supply shortage of 20 million tonnes per year. It covers a large percentage of that shortage with soybean imports from Brazil, the U.S. and Argentina, but “canola oil from Canada will supply part of that,” Zhang says.

BUILDING THE CHINA-CANADA CANOLA RELATIONSHIP

Over the past decade, China has become a large and reliable market for Canadian canola exports. China is the top market for Canadian canola seed, buying just under four million tonnes through the 2016-17 crop year. China also accounted for 26 per cent of Canadian canola oil exports in that period, second to the U.S., and 19 per cent of meal exports, also second to the U.S.

To help maintain and build that trade relationship, 60 industry leaders and government officials got together for the first Canola Dialogue in Beijing in November.



Zhang Xuekun, deputy director and professor at the Oil Crops Research Institute in Wuhan, China, spoke about Chinese rapeseed production at the Canola Dialogue in Beijing in November. He is with the article’s author, Jay Whetter.

As part of the event, the Canola Council of Canada (CCC) and the China Chamber of Commerce of Import and Export of Foodstuffs, Native Produce and Animal By-Products (CFNA) signed a Memorandum of Understanding that includes provisions such as communicating on regulations affecting trade and working together to facilitate industry meetings and exchanges.

“This agreement signals the start of a new relationship with Chinese importers based on co-operation to support mutually beneficial trade,” says CCC president Jim Everson.

China is an amazingly productive country, achieving near self-sufficiency for many foods, coming close to feeding 20 per cent of the world’s population on less than 10 per cent of the world’s land.

But while agronomy and genetic gains will help domestic supply meet part of China’s rising demand for vegetable oils and protein meal, the country will need a large and reliable supply of quality oilseed imports. That spells opportunity for Canada — and inspiration for a new poem.

*O Canada. Land of clean air and good soil.
No better source for quality meal and oil... CG*

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

CHINA OILSEED PRODUCTION, IMPORT AND CONSUMPTION STATISTICS	2013-14	2014-15	2015-16	2016-17	2017-18 (Dec. est.)
China, production of major oilseeds*	58.64	57.66	53.82	55.00	57.45
China, imports of major oilseeds*	75.58	83.15	87.93	98.42	102.35
China, domestic consumption of vegetable oil	32.77	33.61	34.68	35.71	36.75
China, domestic consumption of meal	74.78	78.73	83.03	89.98	94.99

*Major oilseeds are copra, cottonseed, palm kernel, peanut, rapeseed, soybeans and sunflowerseeds. This does not include palm oil. China palm oil imports are around five million tonnes per year. Source: USDA Foreign Agricultural Service

Pea processor wants more protein

Mean protein in western Canadian peas peaked at 24.7 per cent in 2007, but declined to 22.1 per cent last year

BY ALEXIS STOCKFORD / GFM STAFF

Pea researchers have a new focus on protein as plans for the world's largest protein-based pea-processing plant move ahead in Portage la Prairie, Man.

Last January, Roquette, a French specialty food and pharmaceutical supplier, announced construction of the \$400-million plant, expected to employ 150 people and process up to 125,000 tonnes of peas each year.

In an interview last summer, Gwenole Pasco, a category specialist with Roquette, said the plant will use a wet-milling process to separate the protein from the starch and other byproducts of the seeds.

The plant is Roquette's latest move into the alternate protein market. The company has already marketed pea-based protein as an option to dairy, soy or meat in specialized diets, vegetarian, meat reducer or vegan lifestyles, health food products and for those with dairy or soy allergies. The product may also be used for its thickening and binding effects.

Pasco said Roquette will start contracting pea acres as early as this year, although the exact number of acres is unknown.

"We would like to develop some new varieties that would be good from the farmer's point of view, which means a good yield, good disease resistance, easy for harvest — which means standing well at harvest — and also

“Maybe we’ve been focusing on things like yield and maturity and disease tolerance, and protein hasn’t been as high on the merit list as maybe what it should be now.”

— Dennis Lange, Manitoba Agriculture

that is good for the end-user, (which) from our point of view is a high protein level," Pasco said.

A range of Roquette's preferred yellow peas were included in Manitoba Agriculture variety trials last year, with protein counts along with the usual yield data, Manitoba Agriculture pulse specialist Dennis Lange told a field day at Carberry, Man., last summer.

"We've been doing these pea trials for a number of years, but we haven't really been focusing on protein because the market has maybe required more starch product. Now they're looking more at the protein side of things," he said. "We're trying to have these trials in different locations to see if we're going to see any environmental differences between growing peas in Morden, Man., versus growing peas in Carberry and seeing what kind of difference we see with some of the different varieties."

DECLINING PROTEIN

The Canadian Grain Commission reports that protein content has been in general decline since at least 2007, according to the annual Quality of Western Canadian Peas report.

In 2007, mean protein in western Canadian peas (both yellow and green) peaked at 24.7 per cent, a number that fell to 23.9 per cent in 2010, 23.5 per cent in 2012 and sat at 22.1 per cent in 2016.

In 2016, the commission found mean protein was lower in both No. 1 and No. 2 yellow peas than the year before. No. 1 yellow peas tested at 21.5 per cent mean protein content, 0.4 per cent lower than 2015, while No. 2 yellow peas tested 0.5 per cent lower than the previous year.

"One of the things that we have to address is why that's happening," Lange said. "Is it due to environment? Is it due to variety selection? Maybe we've been focusing on things like yield and maturity and disease tolerance, and protein hasn't been as high on the merit list as maybe what it should be now, going forward."

Despite the potential boost to pea acres in Manitoba as Roquette prepares to open its doors, Lange warned against over-tightening rotations to make room for the crop.

He also noted that Roquette's demand will not only be met by Manitoba, but will spread added acres through both Manitoba and Saskatchewan.

"We want to try and have growers be profitable when they're growing this crop and that's, I think, one of the big things that we've stressed with Roquette, is that you have to be competitive with other crops in your pricing," he said. "This, I think, is going to be a benefit for all companies here because it's going to help generate a few more acres in areas that can really grow peas. Hopefully down the road, we're going to see a large amount of sustainable acres in Manitoba." **CG**

More than a rotation crop for feed

Demand is increasing for this officially ‘heart healthy’ crop, but growers need to pay attention to quality

BY ANGELA LOVELL

New varieties that consistently yield 120 to 140 bushels per acre. Increasing demand, with buyers paying a premium. Competitive against weeds, with good resistance to fusarium. That hardly describes a feed crop you seed last because you need it in rotation.

Demand for milling oats is on the rise and processors have announced expansion. Some millers have been aggressive in pricing over the last few years, making oats an attractive proposition, especially over wheat in the fusarium-plagued eastern Prairies, and oat growers are getting a good return on investment with newer varieties.

More growers are getting that message. Statistics Canada says Canadian oat growers seeded 13.6 per cent more acres in 2017 than the previous year, with Saskatchewan up 20.3 per cent to 1.7 million acres.

With up to a third of Prairie oat production destined for human consumption, more growers are growing high-quality milling varieties. In response, oat agronomy research has picked up over the past few years, resulting in this year’s update to the *Oat Growers’ Manual*, available via the Prairie Oat Growers Association (POGA) website. One of the changes in recommendations is that growers target a plant population of 20 to 30 plants per square foot rather than the previous 18 to 23.

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“The new plant population recommendation ensures that growers have the right amount of seed so plants don’t compete with each other, but they can compete with wild oats, and get the best yield and quality they can,” says POGA executive director Shawna Mathieson.

The new grower manual has recommendations on everything from fertilizer application to insect, disease and weed control, and POGA’s website also lists about 30 marketing and research projects the organization is currently working on.

WHAT MILLERS ARE LOOKING FOR

The No. 1 consideration for oat millers is consistency. “If we have a tight range of weights and plumpness as well as moisture, we can mill efficiently at a consistent pace,” says Scott Shiels, grain procurement merchant with Grain Millers in Yorkton, Sask. “Moisture is a huge factor. The maximum moisture level is 13.5 per cent for the mills to be able to dehull the oats properly. If they’re tough, they don’t dehull properly and we end up with hull slivers in the oat groats, which can end up in the finished product, and nobody wants pieces of oat hulls in their morning cereal.”

Oat millers have specific quality requirements, so

“So for us it was a choice between an outright ban on glyphosate pre-harvest application or walking out into every field and telling guys when to spray, which is obviously not a viable option.”

— Scott Shiels, Grain Millers

when choosing varieties, a good place to start is the millers’ preferred oats list, available at grain terminals and milling locations. These lists set out the milling characteristics they are looking for, which varieties best suit them, and which grow best in specific areas.

“Growers want to make sure they are picking a variety that their targeted oat miller is buying, as well as a variety that is good in their area,” says Shiels. “I always recommend that our growers take our list and go talk to their local seed growers. Generally, they will be able to tell them what works well in the area.”

CONTINUED ON PAGE 36

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Variety selection has to work for both the miller and the farmer. “There has to be balance,” says Shiels. “An oat variety has to have good agronomics and produce a good yield for the grower, and we need them to work for us in the mill, and they need to have good nutritional levels, so low in fat and high in beta glucan. Part of the resurgence of oats has been the heart-healthy claims that we’re able to put on them.”

Oats contain beta glucan, a fibre that has been shown to have many health benefits such as lowering cholesterol and reducing the risk of heart disease. Breeding programs have focused on increasing beta glucan levels, and most varieties, especially newer ones, have beta glucan levels that meet millers’ specifications.

MANAGING FOR YIELD AND QUALITY

After variety selection, it’s up to growers to use the best agronomic practices to obtain high-quality milling oats. That starts with a change in mindset, says longtime grower Geoff Young, who farms near Manitou, Man.

“For many years oats were seen as a second-class crop. They were feed grains, so growers didn’t put a lot of thought into choice of varieties or seeding rate and didn’t use a lot of crop protection products,” says Young. “When I grow oats I am trying to produce a high-quality, human consumption-grade product.”

Young follows all the best practices he would for any other high-quality crop. He does a pre-seed cultivation to remove the first flush of wild oats and tries to seed as early as possible — the first week of May is ideal, weather permitting. He uses thousand kernel weight to calculate the seeding rate so he can target 20 to 30 plants per square foot as recommended in the new POGA manual. He soil tests and pretty much finds the POGA fertilizer recommendations — around 100 lbs./acre of total N, taking into account soil residuals — to be spot on for his farm. The biggest change Young has implemented in the past few years has been a seed treatment to prevent soil-borne diseases, and an annual fungicide application to control rust.

“I used Twinline (a BASF fungicide) this year, and on the yield map you can clearly see the difference where we didn’t spray the last 30 acres of the field,” Young says. “A few years ago it was not economically viable to do it and now it’s part of the package. It’s an insurance policy to try and protect the yield and quality.”

This was a great year for oats, and Young was able to take them off nice and dry, but he’s often had to dry oats down to the minimum 13.5 per cent moisture level in the past. He says it comes down to a choice about having good or poor quality.

“When I’m trying to meet quality specifications, it’s easier for me to take them off to make sure they are good quality and if I have to dry them I do. Our farm is set up to do that, but not everybody has that option.”

SKIP THE GLYPHOSATE

Grain Millers will not accept any oats that have received a pre-harvest glyphosate application, because the com-



Millers want a maximum moisture of 13.5 per cent so they can dehull the oats properly and avoid pieces of oat hulls in the customer’s morning cereal.

pany has discovered that it causes problems during the milling process.

“Evidence by sample and grain deliveries, followed by research that we did in partnership with AAFC and the University of Minnesota, showed us that if a glyphosate application is made too early, it damages the starches in the oat groats causing them to become brittle. As a result, they lose their integrity when they are milled, packaged, and further handled or processed by our food company customers,” says Shiels.

“Unfortunately, this damage isn’t detectable ‘at the pit’ and the glyphosate application only needs to be a bit too early to cause a problem. So for us it was a choice between an outright ban on glyphosate pre-harvest application or walking out into every field and telling guys when to spray, which is obviously not a viable option.”

Swathing is a good way to ripen oats quickly as long as it’s dry, and is still by far the most common harvest method with or without a glyphosate burndown. Alternatively, a few growers are starting to straight cut oats to help minimize the risk of leaving it in the swath, especially if they are growing newer varieties bred to be shorter with stronger straw.

LOT OF POTENTIAL

Canada exports much of its oat production to the United States, and the North American market continues to grow steadily at around two to three per cent a year, but international markets are growing much faster. POGA is working with the federal government to try and gain market access to both China and India.

“The potential yearly growth rate in these markets is in the double digits,” says POGA’s Mathieson. “There was more than a 200 per cent increase in Canadian oats going into Mexico in the last two years because of a POGA marketing project there. We are working hard to gain access to export Canadian oats into new markets and to get into some of the bigger markets, which will help increase the market opportunities for our growers.” **CG**

Growing quality oats

Recommendations for oat agronomy from the new POGA Oat Growers Manual and research across Western Canada

BY ANGELA LOVELL

SOIL AND ROTATION

- Oats grow best in black and grey wooded soil zones that have higher moisture, but can grow on sandy loam to heavy clay soils as long as they have good drainage.
- To reduce disease pressure and optimize yields, oats should not be grown after cereals. The best rotational crops include canola, hay, soybeans and other legumes. Research has shown that canola grown on oat stubble has 24 per cent more yield, while canola on wheat and barley stubble increased yield by only 18 and 19 per cent, respectively. Corn isn't the best choice in rotation with oats because it increases the risk of some diseases and ties up N early in the growing season. That said, U.S. research has shown that sandwiching a year of oats between a corn/soybean rotation almost eliminates corn rootworm issues.

SEEDING

- Earlier-seeded oats generally give increased yields and quality. In general, seeding by the middle of May in Western Canada gives optimum yield and quality. Ideal soil temperature for oats is above 5 C.
- Seed treatments can be used to help prevent seed- and soil-borne diseases. In cool, wet growing conditions they can help prevent root rot. Seed treatments are recommended for hulless oats because they are more susceptible to seed diseases.
- The recommended seeding rate for oats in Western Canada is to achieve 20 to 30 plants per sq./ft. Growers should use the higher seeding rate of this range in high-moisture, high-fertility, late seeding and high wild-oat competition situations. Seeding rates can be calculated using thousand kernel weights (TKW) times survival percentage (the percentage of seeds expected to germinate and produce vigorous seedlings). Under normal growing conditions growers should expect 95 per cent

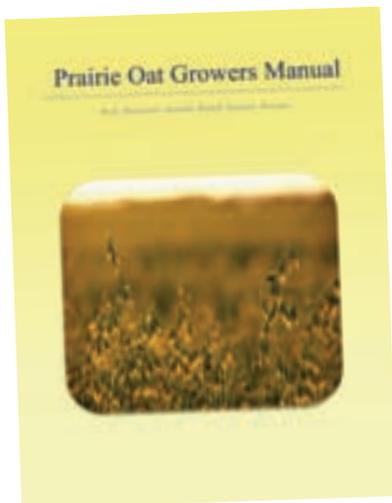
germination, but in cold, wet soil, germination could be 90 to 93 per cent.

- Growers should increase seeding rate of hulless oats because their fragile, thin seed covering can reduce germination.
- The optimum seeding depth for oats is one to two inches — deep enough to reach soil moisture — and should not exceed three inches.
- Oats are usually seeded with a row spacing of 7.5 to 12 inches but research has shown that in no-till systems wider row spacing up to 14 inches does not affect plant numbers or tillering. Wider row spacing may result in increased wild oats and, in dry conditions, may cause harvest issues if there is not enough stubble to hold the swath off the ground.
- Some research suggests that oat seed size may be important for competition with wild oats. A 2005 greenhouse study at the University of Saskatchewan showed that oats derived from large seed produced 17 per cent more biomass and 15 per cent more panicles (flower clusters) than plants derived from smaller seed regardless of genotype or wild oat competition.

FERTILIZATION

- Oats in a no-till situation remove fewer nutrients from the soil — except sulphur — than barley, wheat or canola.
- Nitrogen (N) is the most yield-limiting nutrient in oats and a soil test is recommended to determine the amount of N growers need to apply. Too much N reduces test weight and the percentage of plump kernels, and also increases lodging. Too little N reduces tillering and yield.
- N requirement depends on moisture availability. Yield potential is higher with more moisture, and so a higher N rate is required to achieve optimum yield. A 100 bu./ac. oat crop generally requires 97 to 117 lbs./ac. N. Agriculture & Agri-Food Canada (AAFC) researchers at Brandon and Indian Head confirmed that under normal conditions optimal yields were achieved when soil plus applied N was at 89 lbs./ac., which is around 36 to 71 lbs./ac. of applied N, depending on the residual.
- There are situations when a P application may be beneficial such as on newly broken land, fallow fields, seeding into cold, wet soils or on sandy soils. An application of 18 to 28 lbs./ac., half applied with the seed, is usually adequate to produce optimum yields.
- Oat response to potassium (K) only occurs when soil test levels are below 280 lbs./ac., and soils that are sandy to sandy-loam or poorly drained are more prone to K deficiency. In cold, wet soils, an application of 15 lbs./ac. of K chloride (0-0-60) in the seed row may result in a crop

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The Prairie Oat Growers Manual is available at www.poga.ca.

response. Applications higher than 18 lbs./ac. should be side-banded or broadcast to avoid seedling damage.

- Oats have one of the highest requirements for sulphur (S). An application of nine to 15 lbs./ac. of sulphate is usually sufficient in most soils to correct the deficiency and provide for optimum yields.
- Of all the micronutrients, oats are most susceptible to manganese deficiency, especially in high-pH or sandy soils low in organic matter, and can be cured with an application of manganese.

PREVENTING DISEASE

- Crown rust is the most prevalent and destructive disease in oats in Western Canada. It reduces yields, lowers test weight and groat percentage and increases lodging by weakening the oat stem. The disease-bearing spores blow in from the southern U.S., but can also be produced locally on buckthorn bushes. Ideal conditions for crown rust to develop are when daytime temperatures range from 25 C to 30 C and are 15 C to 20 C at night, with dew and adequate moisture.
- Growers should choose resistant varieties to control crown rust. Fungicides are available, and growers should pencil in the cost of a fungicide application if they are seeding a susceptible variety like AC Morgan. Research has shown that use of a fungicide is unlikely to improve yield when early planting is combined with a moderately crown rust-resistant variety. It is recommended that growers plant early with a moderately crown rust-resistant oat cultivar to avoid the need for fungicides.
- Barley yellow dwarf virus (BYDV) is spread by aphids blown into Canada from the southern U.S. and can result in low test weight. There are no resistant varieties, but planting early can help reduce damage.
- Most oat varieties are resistant to smut, and seed treatments are also an effective control. Fusarium head blight (FHB) is a fungal disease of most concern in Manitoba. It causes significant yield losses but can be hard to detect in oats. It's most common in black soil zones and with high moisture conditions at flowering, but can also spread through wind and planting of infected seed.
- Oats are not susceptible to many insects, although cutworms, wireworms and aphids can cause damage to oat crops. Provincial crop protection guides list registered insecticides for oats.

WEED MANAGEMENT

- Integrated weed management options give the best results. Wild oats remain a major concern for oat growers as there are no herbicide products currently registered for in-crop wild oat control.

- Growers do have herbicide options to control broad-leaf weeds in oats, but increasing seeding rates, controlling weeds prior to seeding by tillage or herbicide application, and varying seeding rates are good management strategies for wild oats.
- Higher seeding rates and banding fertilizer adjacent to the seed can increase plant populations and make them more competitive, and using a larger seed size may also help to increase plant biomass. When seeding at higher rates growers should choose varieties with good lodging resistance as there is a higher risk of lodging.
- Growers can also plan rotations to reduce weed pressure. Using herbicides in rotational crops before or after oats and growing perennial forage crops for a few years are good long-term strategies for reducing wild oat populations.
- Herbicides containing 2,4-D should be avoided on oats as they have been shown to cause considerable yield reduction. Products containing dicamba should be used according to the stage restrictions on the label and not used under stress conditions.

HARVESTING AND STORAGE

- Timing of harvest is critical to avoid damage to oat hulls, thereby reducing quality and yield. Oats should be swathed when kernel moisture content is about 35 per cent to avoid negative impacts on groat yield and test weight. Oats are ready to swath when the panicle has turned yellow or brown and the least mature kernels have turned a cream colour. Oats left too long in the field can weather, lose quality and shatter during storms.
- Straight combining oats may be an option but growers should ensure no green hulls are present or the oats will not make milling grade. If oats are left too long in the field before straight cutting, weather may cause the stems to break down and reduce yield.
- Prevent damage to oat hulls by reducing cylinder speeds to around 900 r.p.m. and allowing wider concave clearances. Oat buyers discount oats with a high percentage of de-hulled kernels, so growers should aim for less than five per cent de-hulled kernels through harvest, storage and delivery.
- Growers should be cautious about using a pre-harvest glyphosate application on oats. Major oat buyer Grain Millers no longer accepts oat shipments that have received pre-harvest glyphosate because of concerns about the functionality of the oat during milling. Some markets also have strict limits on the allowable glyphosate residues in oats, which could affect their saleability.
- Oat spoilage occurs when initial temperatures range from 0 C to 21 C with respective moisture from eight to 17 per cent. The Canadian Grain Commission has safe storage guidelines for storing grain on its website. **CG**

Without chemicals

Organic potato production on a commercial scale is a challenge, but one Ontario grower is meeting it

BY JULIENNE ISAACS

Isaiah Swidersky offers a careful answer when asked if organic potato production is a risk worth taking. “To some degree it is, but there’s a reason I haven’t expanded it to 200 or 300 acres,” Swidersky says. “It’s a challenge to grow organic potatoes. But I’m optimistic. It’s a good challenge.”

Swidersky’s operation, Rose Mountain Farm, is one of the largest organic farms in the Alliston, Ont. area at 250 acres, with 50 of those devoted to organic potatoes. He also grows organic spelt, corn and mixed grain (barley-oats-peas) sold as hog feed.

When Swidersky started his operation in 2003, his first target market for organic spuds was the gourmet and restaurant segment, but he found the market a “hard sell” with constant, seasonal demand for new potato varieties.

These days he sells primarily to the table market, with most of his produce going to wholesaler packers who distribute to grocery stores. Out of his surplus, he also supplies some local farm markets — but Swidersky says potato demand for the latter is increasing.

“I like to support the local economy, and the margins are a bit higher there as well,” he says.

Wholesalers advise Swidersky on the varieties they want to sell, but because he is not obligated to sell to them, he takes on some risk that quality will be up to his customers’ standards. “Ultimately I’m on the hook for it,” he says.

YIELD PENALTY

There are other risks to growing organic potatoes. Swidersky says that though prices are higher, yields are lower, and his organic spuds are at least as expensive to grow as conventional potatoes.

Average yields in the area for conventional chipping potatoes are 280 to 300 hundredweight per acre. By contrast, his organic table and chipping potatoes weigh in at the 150 to 180 hundredweight mark, although Swidersky says in a year with no late blight and ideal conditions, organics go as high as 240 hundredweight on his operation.

“In terms of inputs, it would cost us almost the same input dollars per acre to grow a field of organic potatoes as conventional potatoes, because the seed can be more money, the fertility inputs are more money, and weed control costs more,” he says. “I think the potential is there to make more money on organics — on paper they look great, but in reality it’s a tough one.

“We’ve had a lot of disappointments along the way to slow down our growth, but Ontario imports quite a few organic potatoes from Manitoba and Prince Edward Island, so there is an opportunity in our province to grow more locally.”

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Isaiah Swidersky says resistant varieties are one organic defence against late blight, but these varieties aren’t always the ones in highest consumer demand.

“The potential is there to make more money on organics,” Swidersky says. Yet while crop prices are higher, yields are lower and inputs are expensive. It leaves Swidersky saying, “On paper they look great... but in reality it’s a tough one.”

DISEASE AND PEST CONTROL

Pest and disease control is the biggest challenge facing organic potato producers.

Much of this is due to the lack of products registered for use on organics. Swidersky says organic approvals for products are sometimes removed due to formulation changes, further limiting the choices.

Potato growers traditionally rely on a suite of integrated pest management solutions, including clean seed, tillage and other

mechanical weed control methods, regular scouting, managing irrigation and keeping plants as healthy as possible.

Swidersky says the biggest disease threat at Rose Mountain Farm is late blight. His strategy is simple. He uses tolerant varieties and plants as early as possible to encourage a more developed crop by the time the disease pressure kicks up in late July.

But there’s sometimes a disconnect between resistant varieties and market demand.

“Some varieties have better tolerance to foliage infection; some have better protection for the tubers,” says Swidersky. “The problem is if the potatoes don’t look like what the supermarket wants, it can be a challenge to sell them.”

Colorado potato beetle (CPB) is occasionally an issue, as is potato leafhopper — the latter has been a major problem in the past — and tarnished plant bug.

Swidersky says he never plants more than 25 acres of potatoes in a single field, and different fields tend to see different issues. He has hired crews to manually pick CPB, but he also has the option of spraying Entrust, Dow’s organic liquid formulation — although he rarely has to use it.

“I’ve had that pouch of Entrust in my shed for a few years,” he says. “It’s there as a backup, and we try to keep the plants as

healthy as possible and we time planting and harvest and turn to other management techniques before we have to go and spray.”

Once potatoes are in storage, disease management again becomes an issue. Organic potato producers can’t use Phostrol, which is used by conventional producers as post-harvest protection against late blight and pink rot in storage. Swidersky has fogged StorOx into the organic potatoes’ ventilation system to control bacteria and fungi, “but you can’t perform miracles,” he says — particularly if late blight or rot-infested potatoes get into storage.

Additional control can be achieved by keeping the organic table potatoes at a low temperature — four degrees Celsius is the target.

As long as producers are willing to rise to the challenge, most problems in organic production can be overcome, says Swidersky.

But as demand increases, the organic potato segment could benefit from greater diversity of pest control products — and variety research — to help producers meet their targets.

“My hope for the future is that there will be more disease-tolerant varieties available to us that are desirable to the market,” Swidersky says. “A late-blight tolerant potato with good market acceptance would be a game changer.” **CG**

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., AWC Delegate

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For food and ag startups

A real life Dragon's Den is coming to Montreal with loads of cash and a focus on ag and food innovation

BY MAGGIE VANCAMP / CG SENIOR BUSINESS EDITOR

The title is certainly impressive. Manuel Gonzalez Guzman is managing director, global head of banking for food startup innovation and Rabobank's Banking for Food Inspiration Centre.

Rabobank after all is one of the world's largest banks with over \$750 billion in assets, all of it focused on the food, agribusiness and beverage industry.

Equally impressive, the Yale PhD Gonzalez is founder of FoodBytes, a Rabobank-sponsored food business-pitching network that started in California in 2015 as a way to help disruptive food and agricultural businesses get started and do a professional pitch to venture capitalists.

Since then, more than 1,400 companies have applied to pitch to over 2,500 attendees at events on three continents.

And now FoodBytes is coming to Canada, setting up in Montreal on May 16, 2018. And they're looking for Canadian startup ag and food companies to apply to participate (<http://www.foodbytesworld.com/apply-to-pitch-montreal-2018/>).

"We wanted to create a space for entrepreneurs to be heard and meet with the people who can help them to be successful," says Gonzalez.

The pitches will be mostly technology-based innovations, and about one-third will be in each of three categories: products, food technology, and agricultural technology.

Successful applications need a good team behind them. And, of course, a strong business case.

Applying companies need to address their revenue model, competitors, how to scale, customer acquisition, and cost base.

The team must know the company's margins and how it can improve as it scales up. The product or service must have a competitive advantage and high barriers to entry with strong-growth market opportunity.

The team needs to be building a successful business, and they must have done research to evaluate the competitive landscape to validate the need for their idea.

They must also demonstrate that the innovation have some social impact.

Application deadline is March 11, 2018.

The concept must be a game-changing approach to solving a problem or gap in the market that could have major impact at scale. But it doesn't have to be large already. "They don't have to have millions of dollars worth of sales, they can be starting, just about to launch... but they have to be scalable," Gonzalez repeats.

Pitches are presented to five or six judges from a cross-section of successful food industry entrepreneurs — from retailers and agriculture and food technology. Also, a few awards are presented at the event that are voted on by the other participants.

Not only is substantial content required but the pitch needs to be delivered with charisma and the concept needs to be clearly explained during the pitch.

Gonzalez recognizes the high risks around startup companies, and the pressing need to create better solutions to feed the world. "We wanted a place, a haven for entrepreneurs who are facing such huge risks, like leaving their high-paying jobs."

Gonzalez knows risk. He started working for Rabobank 12 years ago in the Mexico office and after working in project finance and mergers and acquisitions, became Mexico's head of risk and eventually Mexico country head. In 2012 he was asked to become head of the Western Region for the corporate bank, which is when he moved to San Francisco. The exposure to the entrepreneurial culture of Silicon Valley and San Francisco, and the dynamic of the food and agriculture industry (F&A), led him to create FoodBytes.

The entrepreneurs are not all technologists or computer geeks. "Sometimes the best ideas start with two guys having a beer and discussing an idea," says Gonzalez.

CONTINUED ON PAGE 42

He has found that places like Australia and Canada tend to be where many practical ag developments start, because the issues are identified when companies are invested in production and when smart individuals literally get their hands dirty in everyday production. "Innovation comes from understanding the problem," Gonzalez says.

This platform has allowed these startups to fundraise, and gives them a stage to launch their ideas. Nina Meijers, senior associate platform manager banking for

food startup innovation at Rabobank says sustainability and innovation are critical in promoting a thriving food and farming industry that will feed growing global populations. "These events are designed to connect food industry leaders and investors with startup companies that are innovating and disrupting the food chain with groundbreaking ideas," she says.

For startups it's often been difficult to find the right channels and make the right connections, and in Canada in particular

it's been notoriously difficult for small- to medium-sized agricultural companies to stir up interest from Bay Street.

But that's changing. In the last few years there's been a shift with larger agricultural input and equipment companies (corporate venture capital) investing in smaller agtech companies, pockets bulging with funding at precision agriculture conferences, and the emergence of venture capital funding groups like AVAC Ltd.'s Verdex Capital.



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Non-profit agencies are also becoming more developed. In December, Bioenterprise Corporation, a national agri-technology business accelerator based in Guelph, joined forces with the AG-Bio Centre, a business incubator-accelerator that supports Quebec companies in the agri-food, biotechnology and environmental science sectors.

Even the federal government is getting in the game with FCC Ventures, the venture capital/private equity division of Farm Credit

Canada. FCC Ventures focuses on providing equity in early- to mature-stage companies. And more recently, the Canadian government has offered financing for the development of superclusters to spur research and innovation. As of the end of the year, there were more than 100 applicants for access to the five-year, \$950 million Innovation Superclusters Initiative fund.

According to an AgFunders investing report (www.agfundernews.com), investment in innovative food and agriculture

technology increased 540 per cent from 2011 to 2016. However, in 2016 that was only about 2.5 per cent of the \$127 billion raised globally in venture capital, according to the group's Venture Plus Report.

Some industry pundits are warning that the food and agtech is ripe for a correction similar to the drop that hit clean technology after so much hype in the early 2000s. Others are saying it's a structurally different industry built to withstand fluctuations of any kind. **CG**

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Deciding about technology

Why do some farms leap ahead in technology while others wait?
The reasons aren't what you think

BY JOHN GREIG / CG FIELD EDITOR

Four robots at New Galma Dairy near Ingersoll, Ont., milk the cows while a second automated system finds its way around the barn feeding cows and heifers by itself and a third machine beds the cows without human intervention.

Calves can decide when they want milk from a machine that identifies them and gives them their allotted daily feeding over several times per day.

New Galma is one of the most automated dairy farms in the country, and for Nicolaas Zeldenrijk, it feels like each decision has led to the next as the family learns to manage not just by expert cattle stockmanship, but by data.

For example, when the family automated both its milking and its feeding systems, it found there were never any times when all the cattle were up out of their stalls simultaneously, which would have been their best chance to bed them, so they added a new automated bedding system from Denmark that runs above the stalls on a rail, dumping whatever bedding is used and separating manure solids.

All the technology has paid off in labour savings, as Nicolaas and Wilma Zeldenrijk and their children run

the farm where about 200 cows are milked.

The Zeldenrijks' dairy farm is an example of the type of labour-saving technology being adopted across the agriculture sector in Canada.

The productivity of Canada's on-farm labour has spiked in the past eight years, especially compared to the previous 50 years. In fact, our agriculture labour productivity growth is going up at a faster rate than that of the total Canadian business sector.

Canadian agriculture labour productivity has increased by 50 points between 2007 and 2015 from a base of 100, a more than six per cent annual growth rate, according to Statistics Canada.

By comparison the total business sector has only increased by 4.4 points since 2007.

The Statistics Canada category includes forestry and logging, but a close look shows crop farmers have done the most to increase their labour productivity, up 51 points in 2013 over the 2007 base of 100. Livestock farmers are at 21 points over 2007. (Forestry and logging performed reasonably well too, up 26 points over 2007.)

Unlike farmers, efficiency in the agriculture support

Nicolaas and Wilma Zeldenrijk operate one of the most technologically advanced farms in Canada, with automated feeding, milking and bedding.



sector achieved just a seven-point increase by 2015. That's a bit under one per cent per year.

This trend is not new. Statistics Canada's numbers back to 1961 show that between that year and 2007, agriculture labour productivity outpaced that of the total business sector. That means a 3.7 per cent per year increase in agricultural labour productivity from 1961 to 2015, says Matthew MacDonald, assistant director of the national economic accounts division at Statistics Canada.

There are several factors that go into measuring labour productivity, says MacDonald. "To understand the factors behind this growth, the multifactor productivity program (MFP) divides this growth in labour productivity into its key determinants: capital intensity (changes in capital per hour worked), investment in human capital, and MFP, which includes technological change, organizational innovation and economies of scale."

At New Galma dairy, the Zeldenrijks were like many farmers who adopted robotic milking, but they were the second in the country with a robotic feeding system, using a robot that moves around the barn auto-

Farm size and operator education level aren't the real factors for explaining which farms adopt technology

mously feeding the cows. They were approached by Lely to trial the system and they agreed.

"In the beginning there were some issues, but there have been a lot of fun things too. We've had so many visitors," he says during an open house day for Lely where dairy farmers roamed the New Galma barn and others in the area, learning from each other.

The driving of productivity and the adoption of new technology from farmer interaction isn't a surprise to Eric Micheels, an assistant professor at the University of Saskatchewan.

Micheels and fellow researcher James Nolan pub-

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As with the Zeldenrijk operation, farms are more likely to add new technology if they are also continuously focused on getting better sources of production insights.

lished a paper in 2016 in the academic journal *Agricultural Systems* that looked at how farmers adopt technology, focusing on how they access their networks of sources and peers. They also looked at the capacity of the farmer and farm to implement the technology.

Productivity increases and technology “go hand in hand,” Micheels says.

“Productivity from a sector level is all fed by individual farm-level decisions on being more efficient. If the goal of Canadian agriculture is to increase productivity, one way to do that is to help farmers in that adoption process.”

The technology has to be available, but adoption comes down to the willingness to embrace change, skill level, and the availability of peer groups of farmers.

“I looked at concepts of social capital and absorptive capacity, how connected that producer is to their broader network,” says Micheels. That includes connections to other farmers, extension specialists, researchers, input suppliers and people who have knowledge of how technology has functioned on other farms.

The research identified several factors that influence technology adoption. One is farm size, as most readers might expect, but it’s actually farm size based on employees, not acres. Again, it is the access to more diverse ideas that matters.

“It’s the employees as a source of ideas. Maybe they’ve worked on other farms, maybe in another industry,” says Micheels.

Other factors include the presence of successors, and tied to that is the stage of life of the business. Farms closer to being wound down or sold will have fewer reasons to adopt technology.

Even though farmers continue to age, however, the rate of labour productivity isn’t declining, according to Statistics Canada figures.

“They might be 57 and they might say they’re going to farm until they’re 77,” says Micheels. “There’s no defined retirement date.”

That’s why stage of life of the business is more

important than the age of the operator in judging technology adoption.

For instance, Bryan Cook’s son Jeff was finishing secondary school and wanted to farm, so it was time for the Cooks to reinvest in the long-running family dairy operation. Their farm was located in Caledon, on the edge of the rapidly growing municipality near Toronto.

They sold that farm and bought an empty farm an hour north near Stayner, Ont., building a dairy barn with extensive technology, including automated milking, feeding, bedding and automated monitoring of milk for a cow’s heat, pregnancy, ketosis and mastitis detection. They also milk close to 200 cows with four DeLaval milking robots.

For Cook it wasn’t just about making work easier for him, it was also about providing the best environment for cows to be productive too — another productivity outcome.

“The cows go about their day without interruption,” he says. “I let them be the boss pretty much of where they want to go.”

The lack of human intervention means less labour for the humans involved in the operation.

Cook’s barn was also part of an open house that drew dairy farmers from across the province.

Micheels found too that the income of the farm wasn’t as much a factor in technology adoption as the desire of the farm to grow to another level.

If a farm has \$1 million in gross sales and wants to get to \$1.2 million, that would drive innovation, says Micheels. But the desire of a farm with \$500,000 in gross sales to get to \$600,000 would also drive similar innovation.

Micheels also found that managerial experience was more an indicator of technology adoption than education level.

“It’s more important to maintain that (education) flow,” he says. “What is your investment year by year into learning about changes in the industry?” **CG**

Re-energizing electric drive

Today's concept tractors may never get beyond the prototype stage, but that isn't going to stop electrification

BY SCOTT GARVEY / CG MACHINERY EDITOR

It was one of those great opportunities that I savour. I was with two very senior executives from one of the full-line manufacturers, and we were having a casual and candid conversation over lunch. We were in a private dining room on the grounds of the Agritechnica machinery show in Germany.

Eventually the conversation drifted to the electric-drive concept machines that were attracting so much attention at the show.

The reality, commented one of the executives, is that there really isn't any technology on the horizon that can compete with the energy density of diesel fuel. Their view was that those alternate-energy vehicles were unlikely to progress beyond the concept stage, particularly the electric-drive machines.

Until, of course, there are technology breakthroughs that overcome that limitation.

So I asked, "Then why bother showing them?"

There are a few reasons, the executives explained. First, there's an element of good old-fashioned bragging. "Take a look at what we can do," as one described it. Second, it gives engineers and marketers a chance to introduce ideas and get feedback from potential buyers. What

do they think of it? Where might they want to use it, or aspects of it? It also introduces new engineering ideas to potential buyers, allowing them to get comfortable with the concepts.

It's unlikely anyone who walked the aisles of Agritechnica this past November could come away without feeling that they had been introduced to the idea of electrification in ag machinery. It seemed clear that electric drive is one of the cutting-edge concepts that is back in vogue. AGCO's Fendt brand displayed its e100 Vario tractor that offered four hours of run time "at average load." It garnered the company a Silver Innovations Award from the show to hang on the wall at corporate HQ.

But the hard reality is — as those brand executives pointed out — the practical application of that machine is still pretty limited. (These executives weren't from AGCO, and their brand had shown its own electrified tractor earlier, but it wasn't on display at this show.)

Four years ago, Agritechnica's aisles were home to a lot of electric-drive systems (relatively speaking), and the engineers I spoke to about them then were high on their potential. But in the last few years, that enthusiasm seemed to wane, and there was little in the way of electrification to see at the 2015 show. That lull, however, seems to be over.

Electric technology is again in the spotlight. Electric-drive innovations populated the halls this year and ranged from complete vehicles to driveline components designed to replace mechanical or hydraulic systems. But did the push toward electrifying ag equipment ever really go away?

"I kind of believe that it's been ongoing," says Michael Pankonin, senior director, technical and safety services, at AEM (the Association of Equipment Manufacturers), which represents most of the U.S.-based manufacturers of ag and construction equipment. "When new concepts are introduced, they're kind of the shiny objects that catch your attention, and then it somewhat normalizes. There are more and more pieces of hybrid equipment coming out."

That's particularly true in the construction sector, where a number of hybrid machines from a few brands have already hit the marketplace.

As evidence of the increasing interest in electric

AGCO's Fendt brand won a Silver Innovations Award at Agritechnica for its all-electric e100 Vario, which has the capabilities of a 65-horsepower conventional tractor but shorter run time.

PHOTOS: SCOTT GARVEY



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The engineering standards group AEF has established industry-wide standards for the future need to connect electric implement control systems to a tractor.



drives, the University of Nebraska hosted a conference on the subject the week after Agritechnica closed its doors. The Nebraska event saw engineers and representatives from industry as well as academia gather to discuss the hurdles and possibilities.

And just what conclusions were attendees left with?

“The prevailing sentiment that I heard in Lincoln was we’re probably going to move, over time, quite strongly into a hybrid-type product before we move to full power in the field through a battery,” says Pankonin. “The energy density was one of the discussions that came up quite frequently. With the amount of energy you can carry around in a tank of diesel fuel, it’s hard to beat that with a battery pack. It’s hard to even come close.”

This year that notion seemed to be the clear understanding of many of the engineering firms exhibiting electric driveline innovations in the Systems and Components display halls at Agritechnica, all of which could help move ag machines along the trend toward hybrid drives in the very near future.

“We’re hoping manufacturers will see these here and will want to work with us,” said a representative from ZF, a Germany-based transmission and driveline components company, as he stood in front of a pair of new electric front-axle drive motors for a tractor at the show.

The ability to easily vary the rotational speed that electric motors offer provides an easy way to eliminate the driveline stress that MFWD tractors experience when front and rear axles need differing rotational speeds, particularly during turns or as uneven wear develops between the front and rear tires. Electric drive motors can easily compensate for those differences as needed.

“You run that diesel in a steady state and then use the driveline to control delivery of power to the ground, tool or whatever you’re doing,” explains Pankonin. “My sense is that’s probably the direction we’re going to go.”

And there are other advantages to that kind of arrangement. At the Nebraska conference an engineer described how one new hybrid design put as much torque to the ground with a smaller engine and electric driveline than a comparable conventional design. And it offers the added advantage of reduced emissions.

“With a hybrid-type product with a diesel engine running in a steady state, you can really improve efficiency and clean up emissions,” agrees Pankonin.

Back on the grounds of Agritechnica, Markus Frey, a technical sales rep for the German electronics firm STW, spoke with *Country Guide* while standing beside an electric, multi-purpose concept vehicle his company had created for the show.

“We took a machine from one of our customers, switched off the diesel engine and added our electrification products and then we made a completely electric-driven vehicle,” he explained. “What we want to show is we’re the right partner for the OEMs.”

Although STW’s concept vehicle was fully electric, the company primarily wanted to show it can offer all the expertise needed to add hybrid drive or individual components to any machine. Like many of the attendees at that Nebraska conference, STW believes the best short-term market opportunities are in blending electric driveline systems into existing platforms, leaving a diesel engine up front.

“It can be a hybrid machine,” Frey says. “We keep the diesel engine, then to save energy we don’t drive with hydraulic motors, we drive with electric motors. We can also recoup energy, so for the time we don’t need the diesel engine we can run with electric energy.”

The work by AEF (the Agricultural Industry Electronics foundation) to standardize electrical implement connections has been continuing over the years as well, essentially getting ahead of widespread use of

the technology to prevent, as Pankonin describes it, something like the old “Beta, VHS” incompatibility problem.

“It has certainly moved beyond the theoretical into the more practical,” he says of the evolving AEF standards. “Frankly, the thing is designed around some pretty serious power transmission. They’re looking at 700-volt direct current and up to 150 kilowatts of power. Not all tractors are going to be able to put that out, but they didn’t want the connector or the interface to be a limiting factor.”

Such a system has the possibility to take over many of the driveline functions, like a PTO, or hydraulic functions, Pankonin adds. “I think it’s recognized that that has some really significant advantages.”

Looking further down the road, as technology evolves, so does the potential for the evolution of practical, all-electric machines. But battery capacity remains the limiting factor that will need to be overcome.

“These guys at Lincoln are working on some really cutting-edge stuff,” says Pankonin. “One of the speakers said they would probably get another couple of years (of advancements) out of the lithium technology in use now. But they’re certainly looking at new battery technologies that sounded fascinating. They were talking about a solid-state battery. I have to look that up. I’m not even sure what that is!” **CG**

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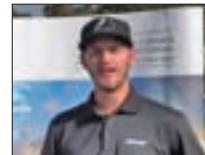
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Re-think the basics

An investment broker who cold-called me last month was more than a bit miffed by the time we hung up. Here's why

BY GERALD PILGER

During his sales pitch, the investment broker on the phone asked me what the value of land was where I farm. I told him I didn't know.

He sounded peeved and he questioned how as a farmer I could not know the cost of land in my area. I replied that he had not asked me about the cost of land, but about the value of land, which is not the same thing. I added that I also could not tell him the cost of land because I had not created or produced any new land.

Clearly frustrated, he said he wanted to know the price of farmland! I told him I could tell him the asking price for land listed for sale, but that was not necessarily the selling price.

Admittedly, I knew from his first question what he was seeking. But this was an unsolicited call from an "investment expert" phishing for financial information. After trying to wow me with his knowledge of economics, investments, markets, and the "sure thing" he was offering, he moved on to Step 2, trying to figure out how much equity I might have available for making an investment.

But he made the mistake of assuming I would equate price, cost, and value as the same thing. I still don't know if this "expert" understands the differences between price, cost, and value, but his misuse of the terms gave me a valid reason for challenging his expertise, and his reaction ended any possibility that I would ever invest with him.

Since that call I have listened closely to farmers in conversation and it is astounding how frequently we substitute the terms "price of land," "cost of land," and "land value." Furthermore, this confusion extends to many other things. Equipment is often defined by cost rather than price. "Commodity value" is as familiar a term as "commodity price."

Many readers may feel it is nitpicking since "everyone" likely knows what you mean by the context you use the terms in. But do they really?

More importantly, I feel we may be missing opportunities because we are not differentiating between cost, price, and value.

Price is the easiest to define. It is the amount paid for any good or service and is usually expressed in monetary terms. In cases where payment is made by barter or even with a crypto currency, the exchange can be calculated

back to a monetary value before it is accepted by the buyer and seller.

One grey area is understanding how price is established. Anyone who has taken a basic economics course will answer that in a free, open, and competitive market, price is a function of supply and demand. The supply/demand graph, where the equilibrium price is the intersection of the supply line and the demand line, has been seared into minds of many farmers. This method of price determination is an easy sell to producers who likely have grown up with auction sales and auction selling.

But I question how relevant this simple economic model is to global agriculture today. Are there actually a large number of both buyers and sellers, as are required for supply and demand price analysis? Is the demand real, or is demand skewed by speculative buying and selling? Are the global markets that we rely on truly free and open?

Perhaps the most important question that has to be asked is: Are producers of agricultural commodities rational? After all, this is a basic assumption of supply/demand price analysis.

If prices fall below the level that returns a profit, do farmers actually cut back production to reduce supply so prices will rise in order to ensure a profit, or do they produce more hoping to spread fixed costs over increased production?

While supply and demand certainly plays a role in price determination, the price we are offered for our commodities or the asking price for inputs and equipment is more likely determined by company policy.

Most importantly, no matter how price is determined, it does not mean the price is fair. Price is simply what the consumer (farmer) accepts.

While most farmers are fixated on price, costs are just as important — as we are finding out since Canada has become a high cost producer of many agricultural commodities.

Cost is the actual expense required to produce what you are selling. Cost is unique to every producer. It is a factual recording of the amount paid for the inputs used in production, plus wages, amounts assessed for use of fixed assets including land and equipment, as well as charges for management.

The cost of equipment is not the price you paid for

it or the depreciation you are able to deduct on your tax return. Rather, it is an amount that reflects the difference in the worth of the equipment at the beginning of the production period compared to when the product you are producing is sold. While many grain farmers can tell you their cost of equipment each year, or even per acre, a much better calculation is equipment cost per tonne or bushel of production. After all, a grain farmer's product is tonnes or bushels of grain, not acres of farmland.

It is only when we break down costs on the basis of actual production that we truly know the real cost of production. It is then we can actually determine the profitability of the products or commodities we are producing. Knowing the actual costs of production opens our eyes to inefficiencies in the production process that may be addressed by changing the production system. Or it may be the signal that we need to produce a different product altogether if the business is to remain viable in the future.

It is critical to know your cost of production!

Of the economic trinity of price, cost, and value, value is the most misunderstood. Yet it likely offers the most potential to business success.

Value is the worth or usefulness of a product or service to a consumer. It represents what a person is willing to give up to acquire a specific good or service.

Value is a determination based on the unique perspective and opinion of each consumer. The value placed on any item will be different for everyone. The value I see in something will be different than how you value it.

With respect to farmland, the value of a quarter of land will likely have a significantly higher value to an established farmer who would be able to square off a section by purchasing the missing fourth quarter than it would be to a person with little equity hoping to start farming. Yet an investor looking for a long-term, secure investment that will provide a minimal return by renting it out to a corporate farm operation may value that quarter even higher than the established farmer does. And the investor may be outbid by someone seeking a picturesque quarter for a hobby farm and eventual retirement retreat out in the country.

Even though the value of the land to each of the four would be significantly different, the land would be still be farmed regardless of who ends up paying the price to purchase it.

Value is not a monetary calculation but a validation every time a consumer makes a purchase. A person will only buy a product when the value they see in that product is equal to or exceeds the price.

The marketplace is full of examples where the value placed on a specific product far exceeds the market price. For example, designer labels and brands are typically priced much higher than commercial products yet consumers are willing to pay the higher price because of the value they place on that label.

Value does not represent need or importance of a

good or service to a person or society. I will never forget a mid-'90s trip to a slum area in India where people were crowded in shacks built of whatever they were able to salvage, with no water or sanitary facilities. Many residents were lacking the basic necessities we take for granted, yet flat screen TVs were a common fixture in these "homes."

Compare the difference in value placed on water, which is essential to life and a cut diamond, whose primary purpose is adornment. Today, even though most of the western world offers safe, clean, drinking water piped right into the homes, people willingly pay a premium price for bottled water which has been further filtered or treated. There are premium brands of water available at even higher prices. And now the "raw water" is being marketed. Live Water, a California company, is selling and delivering, "raw" mountain spring water for \$16 for a 2.5 U.S. gallon jug (minimum four jug order with additional \$22 per jug deposit) to the San Francisco and Los Angeles areas.

Consumers are willing to pay this price because they see higher value in a water the company advertises as offering: "Better oxygenation of cells, more hydration of cells and tissues, optimal transportation of minerals and nutrients throughout the body, super effective detoxification and elimination of wastes, immune system activation and support, and to reverse the aging process" according to the Live Water website.

Value plays just as big a role in our food system. Consider the organic movement, GMO labelling, natural beef, free range, chemical free, pesticide free, no antibiotics, and a host of other labels used to portray a higher value to consumers. Are these claims of additional value valid? It doesn't matter as long as the consumer believes in the value the claim makes. Rather, it presents a sales opportunity for someone willing to supply a product which meets the consumer's values. Does marketing go too far in pursuing these values? Well, that is an entirely different issue that warrants further discussion another time. The question farmers need to be asking themselves is: What is the value of *my* production to the consumer?

The point of this article is that farmers focus on commodity price, which they have very little control over. They tend to ignore costs until profitability suffers. Then, rather than pursue value opportunities to increase returns, they strive for even greater production of commodities which results in a race to the bottom. It is a "dollar store" mentality in a world overrun with low-priced commodities increasingly supplied by producers and countries which have lower costs of production than we do.

Instead, Canadian farmers and our agricultural industry need to look for price opportunities by targeting the consumer's values. And to do this we will have to accept the costs of market research and development that identify and supply value-focused consumers. **CG**



Farm in South Africa?

The land is there, and so is the climate. But this may not be the land of milk and honey for you

BY LILIAN SCHAEER

In many ways, South Africa is an agricultural success story. Its produce and its wines are enjoyed in many countries around the world, and the country isn't plagued by famines or food shortages like others on the African continent.

And yet beneath the apparent prosperity and stability, risks await farmers in a country still struggling with the effects of its recent past.

Fear of forced land redistribution is beginning to rear its head in the South African farm community following President Jacob Zuma's open musings on the idea of taking farms away from their current white owners without compensation.

The embattled president and others in South Africa see this as a way of speeding up the restitution process that has been underway since the end of apartheid in 1994.

In neighbouring Zimbabwe, this approach led to a widespread collapse with white farmers forcibly driven off their properties or even killed, and turning the former so-called bread basket of Africa into a shell of its former self, plagued by inflation and food security problems.

South Africa's land ownership problems date back to colonial rule and the Natives Land Act of 1913 that stripped most blacks of their property rights and designated most land for white ownership. Since 1994, the national government has purchased at fair market value close to five million hectares to be redistributed to black South Africans who could make a successful land claim.

To date, however, research shows 70 to 90 per cent of land transfer projects have essentially failed.



One of South Africa's most successful commercial farmers, Brylyne Chitsunge, is blunt in her criticism of the government, which she says gives no support to new black landowners who get their ancestral land back but have no real idea how to farm it.

"The government needs to stop just giving land to black people without support," she said during a visit at her 1,000-acre farm near Pretoria. "It's painful to see the land fallow. Farmers are given land but not the knowledge."

Chitsunge bought her own farm in Gauteng province in 2010, where she raises Kalahari red goats, African Nguni cattle, pigs, ostrich, rabbits and chickens, and grows vegetable and fruit crops.

But with a PhD in plant biotechnology, she has advantages many new black landowners do not, including resources and knowledge that she has put into learning how to farm her land productively and profitably.

"I mapped this whole farm for soil and water quality, which is so valuable for knowing what to plant," she said. "The government should be giving the information to the farmers to tell them what grows well where. Farming is not easy; it's not kid's play."

For white South African farmers, the land reform process, which is lengthy and cumbersome, can bring risk and uncertainty. Banks, for example, will not lend on a property subject to a land claim, and many farmers are unwilling to risk expansion or reinvestment on an uncertain future.

And tensions between blacks and whites in rural areas led to a sharp increase in violent farm murders in some parts of South Africa in 2017, with 35 murders in January and February alone.

But not everyone is deterred. Kallie Schoeman of Schoeman Citrus, a family business that grows oranges, lemons, and mandarins on approximately 3,500 acres northeast of Pretoria, said that while land reform is not investor friendly, he is still focused on expansion.

"I'm not worried about Zuma, people still have to eat," he said, adding that he's more concerned about the concentration of power in urban areas.

Tommie van Zyl of ZZ2, one of the largest farming enterprises in South Africa and grower of tomatoes, avocado and other vegetables and fruits, feels land reform is an opportunity for South African society to move forward from the past.

"Even if there are claims, there is no problem if we are a willing seller (of the land)," he said. "Land reform is where we think about how to create a different society. It is not only a threat; it can be an opportunity as well."

In fact, last year ZZ2 formed a half-billion rand (approximately \$23.9 million Canadian) partnership with the Makgoba people, beneficiaries of the land reform program in Limpopo province, to turn a

former tea plantation into a large avocado orchard.

"They approached us if we can work with them to develop their land. After careful consideration, we proposed to them to convert their land into avocado farms," van Zyl explained, adding the arrangement gives the Makgobas enough funds to meet the needs of their community and to undertake developmental projects. "The land is their input, and we bring the know-how."

Van Zyl said ZZ2 is committed to buying the crop produced on the land and is marketing it under a special branded program called Makgoba Afrika.

In the Western Cape region of South Africa, Van Loveren Family Vineyards, South Africa's biggest family-owned winery, is one of many in the area participating in Black Economic Empowerment (BEE) projects, going into partnership with their workers to share economic benefit and provide skills and knowledge training.

Their first such initiative began in 2006 with the purchase of the De Goree farm, where a trust of 116 Van Loveren farm workers holds 52 per cent of the shares in the property and has a long-term supply contract with the winery. Van Loveren was one of the first wine estates in South Africa to undertake a BEE project; De Goree was recognized as BEE project of the year in 2008.

"Van Loveren has always been innovative and we want to be part of the process of change," said Bonita Malherbe, brand manager at Van Loveren. "We want to share our success with our workers. Many of our employees here are third generation or longer, that's 80 years of walking a path together."

A second BEE program involved purchase of their Middelburg Farm, where local Van Loveren workers currently hold a 30 per cent stake, but the goal is to boost that to 50 per cent by 2030, according to Malherbe. A third initiative, Olyfberg, was launched in 2016.

"We had an obligation — everyone should be part of our growth strategy," Malherbe said.

Nearby Du Toitskloof Winery launched its fair trade initiative in 2005, dedicating a portion of funds from every bottle of wine to social supports for its workers.

This includes day care centres for the children of farm workers, a clinic and

medical care, primary school, bus service, bursaries for high school and post-secondary education, adult literacy projects, and health and safety education.

"This is our project for our community — 26 of our teachers were previously farm workers," said Bernard Kotze of Du Toitskloof, adding that the next dream is to add a retirement village. "The rural farm labour community is among the poorest of the poor, but our project is helping to eradicate this. We are extremely proud of our labour force." **CG**



Tommy Van Zyl: modern farming pays for modern community services.



Volunteer!

There's a critical need for farmers and farm families to give their time to protect and enhance the quality of rural life

BY HELEN LAMMERS-HELPS

Volunteers are the heart of a community. Despite their isolation and sparse populations — or maybe because of it — farm communities in particular have been held up for generations as models of neighbourliness, with families supporting each other in times of need.

Now, neighbourliness may not be enough. Something more structured is needed, with farmers and farm families taking a more active role as volunteers.

With declining and aging populations in many rural areas, the quality of life in our communities is under threat.

Karen Kirkwood-Whyte is the CEO of United Way in Chatham-Kent, a single-tier mostly rural municipality in Ontario's southwest. With 35 years' experience in the non-profit sector, Kirkwood-Whyte has witnessed these demographic changes and their effects firsthand.

In the past two decades, the population of Chatham-Kent, which currently sits at just over 102,000, has declined by more than six per cent due largely to the loss of local manufacturing jobs.

"Agriculture is where it's at now," observes Kirkwood-Whyte.

Meanwhile, a number of initiatives have been put in place locally to help maintain a strong and healthy community, and Kirkwood-Whyte has been invited to speak about the direction they are taking, such as at the Ontario Nonprofit Network Conference in Toronto.

Recently, I had the opportunity to talk to Kirkwood-Whyte about the challenges and successes in Chatham-Kent.



Question: What are the challenges facing volunteerism in rural communities?

Kirkwood-Whyte: There are significant differences between urban life and rural life. Vast geographic areas and transportation challenges can create feelings of loneliness and isolation. Declining population, declining memberships in local service clubs, and youth out-migration are sad realities.

While there are real challenges including poverty, mental health issues and the emerging opioid crisis, I prefer to focus on the strengths. Communities too often focus on what's missing, the half-empty glass. This is the philosophy behind Asset-Based Community Development (ABCD), a framework conceived by John McKnight of Northwestern University in Chicago.

According to management guru Peter Drucker (best known as the father of modern business management but who went on to work in the non-profit sector after his retirement), a healthy society requires three vital sectors — a public sector of effective government, a private sector of effective business, and a social or non-profit sector of effective community organizations.

As the lines continue to blur between the business, government and voluntary sectors of the community, the third leg of the stool in Drucker's "tri-sector integration" concept is getting wobbly.

I believe citizens are at the heart of functioning democracies. There can be serious consequences when government employees begin to do things for citizens that they can do themselves with the support of community volunteers and those who work in the public benefit non-profit sector. The potential loss of community ownership is a real concern.

The social fabric of everyday life is not something we want to see eroded. We have much more work to do in the area of civic engagement.

I agree with Cormac Russell who spoke recently at the Bank of I.D.E.A.S. in Western Australia. Russell says we need to reboot democracy and "reverse the trend of the last 50 years which has turned active citizens into satisfied or dissatisfied customers/clients/tax payers, and to address the historically low trust people have in government and other institutions."

Question: What initiatives has Chatham-Kent taken to improve collaboration among these key sectors?

Kirkwood-Whyte: There are five capacities that build community. These are an abundance of social capital (this is the glue that holds everything together), strong connections with the outside world (bringing knowledge gained elsewhere back home), a willingness and capacity to welcome and integrate newcomers, an ability to adapt and innovate, and a capacity to collaborate.

The last one is actually the toughest. There is a need to better collaborate (both inter-agency and inter-sec-

The main reason why most people don't volunteer is simply because no one has ever asked them, Kirkwood-Whyte points out. Everyone has a gift, she says. The goal is to identify those gifts, and ask them to share

tor) to break down silos and to identify and eliminate duplication. With funding from the Ontario Trillium Foundation, Chatham-Kent has created a non-profit network to encourage collaboration between public benefit organizations.

A little more than a decade after the City of Chatham amalgamated with the surrounding County of Kent (in 1998), our mayor established in 2012 a Community Leaders Cabinet with representation from the business, government and non-profit sectors. This group meets three times per year and works together to identify strategies that will achieve a better quality of life in Chatham-Kent.

Also, our United Way established a community hub in 2006 to house several local charities and community service organizations so they could share resources such as a board room, photocopier, training space, and central reception services.

We're very proud of this because there's no need to have six of everything. It was a challenge for the United Way board to commit to a 10,000-square foot space when that was much more than was needed, but our shared space has worked very well.

Question: Are you doing any special initiatives to help newcomers integrate into the community?

Kirkwood-Whyte: Newcomers are arriving and they have much to offer. Chatham-Kent was the first community in Canada to be recognized as a Welcoming Community. Several Syrian families are making Chatham-Kent their home and, in particular, our Local Immigration Partnership (LIP) and Adult Language and Learning organization have been actively involved in working with newcomers to help them get settled.

With a municipal grant, our LIP and Chatham-Kent Nonprofit Network (CKNN) have hosted two Diverse City Parties, each with more than 250 people in attendance, who enjoyed sampling foods and watching cultural dancers perform.

This was an idea Chatham-Kent borrowed from Vu Le, a writer, public speaker, and executive director of a Seattle, Washington non-profit organization. The Chatham-Kent Non-profit Network invited Vu Le to present his ideas on strengthening the voluntary sector at a United Way annual meeting in 2015.

Question: Do you think people are aware of all that the voluntary sector contributes?

Kirkwood-Whyte: There needs to be better recognition of the work undertaken by the non-profit sector.

We need to showcase our relevance in the building of stronger, safer and more caring communities. Chatham-Kent, with its population of just over 102,000, has 550 non-profits and charities (including places of worship). This sector employs more than 1,000 full-time and 1,000 part-time employees, contributes more than \$135 million in economic value and boasts over 30,000 volunteers.

Question: The face of volunteerism is changing. Do you have any ideas for how to engage new volunteers?

Kirkwood-Whyte: There are challenges of demography and more and more great causes competing for attention. Every single citizen has a gift to share. The goal is to identify those gifts — whether it's time, talent or treasure — and then simply ask individuals to share them.

According to data from Stats Canada cited in Tracy Birtch's report on rural volunteerism for the Rural Ontario Institute, almost half of people currently not volunteering said it was because no one had asked them to do so.

There's a tremendous amount of potential in retirees and we're trying to attract the youth back for the great quality of life we enjoy here in Chatham-Kent. Volunteers tend to be more focused on events and short-term tasks rather than long-term commitments.

Question: What impact is technology having on the non-profit sector?

Kirkwood-Whyte: While technology is creating opportunities for non-profits and charities, it's a challenge to keep up and develop appropriate tools because of limited financial resources.

We've seen tremendous changes in technology since I started at United Way 35 years ago. When I began my career, I worked with a hand-me-down adding machine without a tape, a manual typewriter, a Gestetner and a box with recipe cards to record charitable donations.

For our United Way, which fundraises on behalf of more than 30 small charities, it's becoming more difficult to compete with third-party, private sector fundraisers who have a significantly different bottom line.

It's also been a challenge to retain some young talent who can earn more money in the government or private sector while working fewer hours. However, some young people really want to make a difference in the lives of others and are willing to take less money in return for a feel-good job. We're putting an emphasis on that when attracting new employees to our organization. **CG**

RESOURCES

nonprofitaf.com
Seattle, Washington non-profit executive director and blogger, Vu Le writes about topics of interest to the non-profit sector with humour.

bankofideas.com.au
Bank of I.D.E.A.S (Initiatives for the Development of Enterprising Action and Strategies)

ruralontarioinstitute.ca/
foresightpapers
Rural Ontario Institute Foresight Paper, Rural Volunteerism: How well is the Heart of Community Doing?

RUSHING TO GET TO THE BATHROOM

If you rush to the bathroom, but don't quite make it, you are not alone. About 3.3 million Canadians experience some degree of incontinence, although even this is only an estimate because many people don't admit to incontinence or just accept it as a normal part of aging.

The two most common types of incontinence are stress and urge.

In stress incontinence, the leakage of urine is caused by a sudden pressure like a sneeze or a laugh, or a weakening of muscles so they in turn keep the bladder from emptying.

Don't ignore incontinence. Often, there's a cause that you can correct

Pregnancy, older age, menopause in women, and prostate problems in men account for most cases.

Urge incontinence (or overactive bladder) happens when you have the urge to go to the bathroom, but just don't make it. With age, urge incontinence becomes more common.

You shouldn't ignore incontinence. There may be an underlying cause that can be corrected.

Urinary tract infections, kidney stones, prostate problems, multiple sclerosis, Parkinson's disease, Alzheimer's disease, and even diabe-

tes may cause urinary problems. If the condition cannot be remedied, good control of it will reduce incontinence.

A variety of drugs are available to treat incontinence. The most-often-used drugs are the alpha blockers. They do just what their name suggests: blocking alpha receptors in the detrusor muscle which sits above the bladder.

When the detrusor muscle contracts, it causes the bladder to empty. But with less muscle activity, the bladder doesn't empty as readily.

You may be familiar with some of these drugs, for example tolterodine, oxybutynin, solifenacin, fesoterodine. There are extended-release formulations that need only to be taken once a day, and if one fails, trying another may work.

Unfortunately, side effects can limit their use, for example urinary retention, dry mouth, changes in your eyesight, or constipation.

The newest drug which is indicated for overactive bladder is mirabegron. It is a beta 3 receptor antagonist, which means it directly inhibits nerves in the bladder smooth muscle. The result is relaxed bladder smooth muscle which is then less likely to cause a wetting accident.

As with any drug, side effects may limit its use, for example headache, blurred vision, tiredness, dry mouth, constipation, or diarrhea.

Often, drug treatment is not successful. Side effects may mean you stop the medication or alternatively

you may have another condition or take another medication that means you cannot take the incontinence drug. Or, you may not feel that the drug treatment is effective because you still have symptoms.

Some estimates place drug discontinuation rates for incontinence at 50 per cent within the first year of use.

Obviously, non-drug approaches to incontinence play a major role, with or without medication. Try keeping a "bathroom" diary to help you identify any activities, foods, or drugs that contribute to incontinence. Then avoid them.

Weight loss and smoking cessation can both help reduce symptoms. Developing good toilet habits such as regular toilet times will help train your bladder. Strengthen your bladder muscles with Kegel exercises, and don't forget that there are a variety of discreet pads and briefs.

Incontinence may mean you need to rush to the bathroom, but it shouldn't confine you to your home. **CG**



Marie Berry is a lawyer/pharmacist interested in health and education.

NEXT ISSUE

If you listen to the pharmaceutical company advertisements, you would think that no one ever gets a good night's sleep. While there are indeed a wide array of sleep medications, you may not need what the advertisements are selling. Next column we're going to look at sleep medications and some of the pitfalls of these drugs.

“See you at 4:00,” Dale nodded as he shut the back passenger door of his son Jeff’s truck and stepped out into the cold January morning. This was great, he thought, getting dropped off at the door at the Crop Production Show. He wouldn’t have to circle the parked trucks looking for a space, then trudge the length of the parking lot to get to the door.

If he was quick, this might be the first time he’d ever gone into Prairieland Park building without fogged-up glasses.

Inside, Dale handed over his pass, then headed straight for the coffee lineup where he’d made plans to meet up with Ben Sanders, a seed grower from the other side of the province. It didn’t take long for the two men to find each other, and Ben bought Dale a cup of coffee.

“Guess the coffee would’ve been free over at the meeting hall,” Dale said.

“Sure,” Ben said. “But we would’ve had to listen to the speakers.”

Dale and Ben had made their decision over the phone the week before. “I guess it’s time,” Ben had agreed after Dale proposed the idea. “We should probably give our boys some space if they’re going to make decisions on the farm and run these organizations.”

After years of meeting up at seed association meetings, commodity group AGMs and agronomy seminars, this year they would leave their sons and daughters-in-law to brave the business meetings on their own. As his wife Donna had pointed out when they’d talked about it at home, “It’s probably time to give them some breathing room.”

But after a lifetime of going to farm shows, Dale didn’t want to stay home altogether. “I always said I wished I had more time to just go to Saskatoon and look at the machinery,” he said. “This year I’ll do it.”

Dale had ridden to Saskatoon with Jeff and Jeff’s wife Elaine. Jeff would drop his dad off at the

Big decision at the farm machinery show

Apparently, change comes to everyone, so you might as well be ready for it

machinery show before he and Elaine drove downtown for the business meetings.

Over coffee Ben and Dale traded updates. Dale talked about how Jeff was managing their new farm employee on his own, ignoring Dale’s ideas about wages. Ben told Dale how hard it was for him to see his son swap their red combine for a

“Might as well,” Dale said. “I think they’ve got some new ideas.”

Ben pulled out his smartphone and typed in a few notes during the presentation in the meeting room. When the talk was over he turned to Dale. “I’m emailing this over to my son. We argued about this last spring. Turns out I was right.”

“Oh?” Dale said, eyebrows raised.

“You know what to do,” Ben said, looking pointedly at Dale’s phone

new one with green paint. “And the price? I could’ve got that thing for at least five per cent less,” Ben said.

“We’d better let them learn,” Dale said. “We’re not getting younger.”

“No kidding,” Ben said. “I got these new hearing aids last week. I spent half the trip to the city trying to convince my son there was something wrong with his truck. Turns out I’d just never noticed how loud these winter tires are when you’re on the highway.”

Dale laughed, trying not to worry about whether or not he needed hearing aids himself.

Coffee finished, the two men hit the show. They started with the latest in tractors and combines. “Look at the sectional control on this new air cart,” Ben said. Dale got in for a good look. “I wish Jeff had bought one of these instead of the brand he got,” Dale said.

Ben checked his watch. “Almost noon,” he said. “Want to catch that seminar on plant stand targets?”

“You’re right,” Ben said, turning his smartphone back on and deleting the file. “Nothing worse than somebody saying ‘I told you so.’”

The two followed the flow of traffic until they found themselves back in the machinery hall. “Take a look at this draper header,” Ben said, pulling Dale out of the aisle. Dale took a look.

“This looks way better than the one Jeff came home with last year,” Dale said. “Just hang on a minute. Let me get a few photos.” Within in minute Dale had crawled right under the header and was holding his phone up, making sure he had all the details, when a young salesman came over.

“Nice piece of equipment, isn’t it,” he said.

“Sure is,” Dale said from under the header. “I’m just getting a few photos to I can tell my son why we need one of these...”

CONTINUED ON PAGE 58



REFLECTIONS

BY ROD ANDREWS

RETIRED ANGLICAN BISHOP

Ben interrupted him mid-sentence. "Wait a minute."

"What's that?" Dale called out.

"We said we weren't going to do this."

"Do what?" Dale said.

"Tell them what to do," Ben said.

There was a silence from under the header, then Dale crawled out. He got up slowly, massaging his left knee. "Yeah. We did say that."

"You know what to do," Ben said, looking pointedly at Dale's phone.

Dale laughed and deleted the photos he'd just taken, then the two men stood looking at each other, trying to figure out what to do next.

"Do you want brochures?" the young salesman asked.

Dale shook his head. "No. I guess not."

"You can still enter our draw for a garden tractor," the salesman said.

"No thanks," Ben said.

As they walked away from the booth, Dale turned to look back. "That kid can't be older than 12," he said to Ben.

"They're getting younger every year," Ben said. "I've got an idea.

"What's that?" Dale asked.

"Every year we've come to Saskatoon and spent all day at meetings. This year why don't we shut 'er down early and go get a drink?"

Dale looked at his watch. Not quite 1:30. "Why not?" he said. "As long as I'm at the door by 4:00."

They made their way to the bar and were about to sit down when Dale noticed someone waving from across the room. "I know that guy. He's from Tisdale. He used to be on the seed growers board."

"That guy with him looks familiar too," Ben said.

As they got close the man who had waved called out a greeting. "First year skipping the business meetings?" he asked.

"Yeah," Dale said sheepishly.

"Year two for me," he answered. "Don't worry, it gets easier."

Before long they were settled in at the table full of men, all in various stages of passing their farms on to their sons. Except Bruce, who was passing his operation on to his daughter.

"She knows what she's doing," Bruce said. "But it's hard to keep from giving her advice."

This made Dale laugh so hard he snorted rye and coke out his nose. "Excuse me," he said. "That's what I get for drinking in the afternoon. I hope the kids don't find out."

Then he checked his watch. Almost four. "Oh heck," he said, "I've got to go."

"Me too!" Ben said.

They made it to the door with two minutes to spare.

"Same time next year?" Ben said.

"You bet," Dale answered, as he walked out into the cold to get into Jeff's truck.

"Are you Rod Andrews?" My wife Jacqueline and I are enjoying lunch while waiting for a flight home. An Air Canada captain is sitting across the restaurant. He keeps glancing my way. Eventually, he introduces himself. He claims I taught him to fly 40 years ago. I could not remember him. Later, I found entries in my log book to jog my memory.

The song "Try to Remember" expresses the melancholy that comes when you know summer has slipped from your grasp, and you wonder where it went. "Try to remember the kind of September when life was slow, and oh, so mellow." The words are not just a lament about seasonal change. They are a cry from the heart, about what happens to us over the course of a lifetime. "Try to remember when life was so tender... when dreams were kept beside your pillow... and if you remember then follow."

A treasure house of memories is locked inside us. Many of our memories are of people we have loved. I have been reflecting that memories are like a thermometer. A thermometer does not cause the temperature to go up or down. It simply measures the temperature. Memories do not cause relationships to go up or down. They simply measure how warm or cold those relationships have been.

How did you become part of your family? Perhaps you were born into it, or you were adopted. If you married into a family, chances are you were told many stories, some of them more than once! The drawing out of family stories from memory banks and the sharing of them with new members incorporates people into a family. As a son-in-law or daughter-in-law you probably experienced this. Hearing family stories is an initiation rite.

Last summer Jacqueline and I rode on a steam train in central Alberta. The train stopped in Big Valley. After dinner we were shuttled up a hill overlooking the town. We visited a historical church. In my early 20s, I was the student minister at that church for three summers. Memories flooded back. I remember singing "Holy, Holy, Holy" on a summer Sunday as if it was yesterday.

Not all memories are pleasant. Some are sad, even bathed in tears. All of us have memories we would like to forget. Iain Luke is principal of a theological college in Saskatoon. He says "When there is anger, hurt, bitterness and dysfunction, the only way to address it is to remember how and why it came to be in the first place. Otherwise, you end up with people who are still mad at each other, but they can't remember why!"

Iain says, "Memory reminds us where we came from, who we are, what we have done, who has been part of our life, what we stand for, and why it matters. That kind of remembering creates in us a wholeness and strength which can face anything, even bereavement, disability, illness or death."

A student interviewed his grandmother while researching a paper for his psychology class. She said, "Memory is an amazing thing. It allows you to recall events that occurred moments ago or years earlier. Memory allows you to remember people who have passed on into eternity. It allows you to remember love, blessing, joy, excitement and wonder. Memory is a gift given to us by the Lord. Success is when you look back at your life and the memories make you smile."

Suggested Scripture: Psalm 105:1-5, Isaiah 46:3-11

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.

The Leadership Hat of Farm Advisors

BY JORDAN DOMM OF ALLIED ASSOCIATES LLP, CHARTERED PROFESSIONAL ACCOUNTANTS

Much like the farm owners and operators we serve, as farm advisors we often must wear multiple hats in order to truly advise and lead our clients to success. One of the most challenging, yet rewarding hats we can wear is the hat of leadership. It is not something technical. It is not something that can simply be read in a textbook. It is something much more that requires a unique skill set, including a number of skills and traits outlined below. The Canadian Association of Farm Advisors acts as the milliner or “hat maker”, by providing the tools and materials to its members, allowing them to design and assemble a hat that fits just right.

VISION

A true leader has the incredible ability of seeing the big picture and aims to pave a path for others to follow. As a farm advisor, we work with clients to help them define and work towards achieving their long-term goals by providing them with the tools to pave their own path. Through CAFA, advisors stay current with industry trends via the professional development offered. They work together with one another in order to find the most relevant solution for the situation.

They are accountable to not only their clients and peers, but also to themselves. They have a vision and they want to share it.

CONFIDENCE

A leader is someone that bleeds confidence with everything they do. It is often said that experience builds confidence. Members of the CAFA organization possess the experience and the confidence necessary to advise and lead their farm clientele through the various cycles of their operation. Whether it is a young entrepreneur just commencing their farm operation or an experienced farm operator trying to ensure a viable transition to the next generation, CAFA members leverage their experience and confidence to lead their clients through the difficult decisions.

CONNECTED

Leaders surround themselves with people who share similar values and beliefs and people who want to make a difference. They build relationships with these people and when the time comes, they call upon them to assist in completing the task at hand. The farm advisors of CAFA exercise this same philosophy by sharing experiences and knowledge with fellow members. The seeds of the relationships are planted at the professional events we attend, while the true harvest of the crop occurs at the kitchen table when the farm family realizes their team of advisors have worked together to achieve the desired resolution to their particular situation.

COMMUNICATION

Communication can take on many different forms, some more effective for certain people, while others are not as effective. Leaders tend to have a unique ability of identifying the most effective way to communicate with others to ensure the message is delivered in a clear and concise manner. By being actively involved in the farm environment and educated on farm related matters, CAFA members have a similar ability to “talk the talk” with their clients, ensuring the message is translated from professional jargon into terms the farmer can understand.

KNOWLEDGEABLE

Arguably all professionals are knowledgeable in their particular area of expertise; however, quite often there are times when the knowledge is irrelevant to advising the agricultural community. CAFA aims to empower their members with relevant knowledge by having members attend meetings at their local chapters featuring speakers that are either directly involved in agriculture (producers) or act in an advisory capacity to serve the farming landscape (usually fellow CAFA members).

Hats come in all different sizes, styles and colours, none of which are appropriate for all occasions. CAFA strives to ensure your advisor has a complete assortment of hats and the aptitude to know which hat is appropriate for each specific occasion!

UPCOMING EVENTS:

Farm Management Update; February 8, Red Deer, AB
Farm Update; March 8, Ottawa, ON
Farm Management Update; June 7, Woodstock, ON



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