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CountryGuide

Strategic. Business. Thinking.

WESTERN EDITION / COUNTRY-GUIDE.CA / MARCH 14, 2017

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With UTVs rapidly gaining popularity, Can Am introduces new models with extra seating and cargo capacity.

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The cost of optimism

Like farmers across the country, Shawn Brenn believes that global population growth means the future looks bright if his children want to farm. But how will he and his siblings build a farm that will give the next generation a fair chance to participate in that bold new world?

Something changed exactly a decade ago

It was 10 years ago this month that a small group of us met in Winnipeg to start talking about how we would transform *Country Guide* into a business journal for farmers.

Or, more accurately, it was 10 years ago this month that we got serious about whether it might make sense to even try such a thing.

The answer wasn't at all obvious.

When we got asked, "Will anyone read you?" (which, naturally, was the question that had to be asked) we couldn't really say anything more intelligent than, "Of course."

Actually, we said "Of course!" with an exclamation mark, hoping that if we sounded confident, we'd convince ourselves as well.

We would also proclaim that in 10 years, farmers were sure to be more business focused than ever.

"How do you know?" we'd get asked, followed by "And what does that mean exactly?"

Again, we had intuition on our side, but few real facts.

The truth is, none of us can say we ever predicted the stunning increase in business acumen among farmers today.

Farmers have always been shrewd. There's no question about that, or about the fact that this kind of shrewdness is still vital on the farm.

But now farmers have become sophisticated in ways we couldn't really imagine a decade ago, even though we were looking for signs that it was about to happen.

Nor, for that matter, could we have predicted the impressive health and stability of today's mid-sized farms. Instead, like everyone else, we thought the our mid-size sector was where we'd see the most violent changes.

Most important of all, we didn't foresee how this new financial literacy and business sophistication would be so equally distributed across farm sizes and across so many farm sectors.

Nor were we alone. Government policy was entirely based on the idea that farmers would have to have their hands held any time someone opened a set of books.

In short, we thought we could talk about business, but we didn't foresee 10 years ago that we'd write the issue that you have in your hands today, or cover the stories and topics we've been covering all winter.

We couldn't even guess.

And this in turn makes us ask whether what we write 10 years from now will be as different from today as today is from 10 years ago.

My bet is that it will, and I believe you think so too.

But let's ask those questions again. "How do you know? And what exactly does that mean?"

Here's my briefest answer.

You've heard me say it before. Farmers are decision makers. You make decisions every year that are bigger than the biggest decisions townsfolk make in their entire lives.

Maybe that's always been true, but today I see an agriculture focused on the quality of their decisions, on the quality of their advice, and on the quality of their thinking.

As I've also said, I wish consumers could see the picture of agriculture I see everyday.

There's more to day, but do let me know. Are we getting it right? Let me know at tom.button@fbcpublishing.com.

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Can Am's new UTVs

The brand is following through on a commitment to add new machines to its product line twice a year

BY SCOTT GARVEY / CG MACHINERY EDITOR

BRP, the company behind the Can Am line of products, has expanded our choice of Defender Max UTVs for 2017 with the addition of two new machines, bringing the total number of Max models to four.

The company says the Defender Max UTVs are "pickup truck-inspired" and will now offer seating for up to six adults.

UTVs are gaining popularity with farmers because of that pickup-like ability to carry passengers and at least a small load in the back. In fact, some models have a pretty significant payload rating.

"We made a commitment last fall to vastly broaden our Can Am side-by-side portfolio with the introduction of a new vehicle every six months for the next four years," said Anne Bélec, senior vice-president of global brand communications at BRP. "The release of this second Can Am Defender family of vehicles is a direct result of that promise. The Defender Max vehicle meets the very specific demands of global tradesmen, hunters and farmers."

Just like the previously released two-seater Defender Max versions, the two new machines offer a choice of two V-twin 50- or 72-horsepower Rotax engines. But now they expand available seating capacity with the addition of a rear bench seat.

The rear cargo bed is rated for a 1,700-pound (793 kilogram) payload. And to help prevent damage, the tailgate has a 250-pound (113 kilogram) weight capacity. The box gets integrated anchors and tie-down points along with multiple recesses, including a set built specifically to hold five-gallon (19-litre) buckets in place.

On-board storage can be further expanded with folding front and rear passenger seats and a removable toolbox. And for that little extra touch, the fold-down armrests up front come equipped with cup holders.

Late in 2016, the brand also announced it was adding yet another Defender side-by-side UTV to its line: the new HD5, with what the brand calls a "mid-size" engine.

"The 2017 Can-Am Defender HD5 side-by-side vehicle provides full-size functionality and unmatched versatility at an attractive price point," explained Marc-André Dubois, the brand's global marketing director in a followup press release. "This addition of the handy Defender HD5 packages helps us expand the Defender family lineup to meet market demand and also to grow the Can-Am footprint in the highly popular utility-recreation segment of the industry."

While it may not be as big and powerful as other models in the Defender line, the HD5 still gets a 1,500-pound (680 kg) tow rating and a payload capacity of 1,200 pounds (544 kg). Half of that, 600 pounds (272 kg), can be carried in the tilting cargo box. And the bench seat should accommodate three adults.

The HD5 comes in a choice of two options packages, the base and the DPS, along with a choice of three body colours.

Two new Can Am Defender Max models offer a rear bench seat, boosting capacity to up to six adults. ▶

◀ Two Outlander 6x6 models are new for 2017.

OUTLANDER 6x6

If you like your off-road vehicle to have six wheels instead of four, the newest Can-Am Outlander 6x6 ATV can accommodate that. Its debut was also announced last fall.

The Outlander 6x6 is powered by a fuel-injected Rotax V-twin engine that produces 82 horsepower and 65 foot-pounds of torque. And it delivers that power through a CVT transmission that includes an extra-low gear ratio for slow driving or heavy pulling. To make them easier to control, the Outlander comes with Tri-Mode Dynamic power steering, which allows the operator to select the amount of steering assist.

The Outlander 6x6 offers both 4x6 and 6x6 drive with its Visco-Lok QE. In 4x6 mode, all four rear wheels provide traction. When 6x6 is selected, the system intelligently transfers power from the slipping front wheel to the opposing wheel with traction. The system progressively and automatically locks and requires no additional buttons to push or levers to hold.

The Outlander has a big 1,650-pound (750 kg) tow rating, and the tilt-assist dump box can handle 700 pounds (318 kg).

The Outlander 6x6 is also available with a smaller 65-horsepower engine but it still gets a similar tow rating. **CG**

▲ Defender base green: A new HD5 Defender joins the Can-Am lineup. PHOTOS: BRP

Sexual harassment: **Is your farm at risk?**

The short answer is "yes," but here's how you can reduce your risks with a harassment policy that helps prevent unacceptable behaviours and their consequences

BY MAGGIE VAN CAMP / CG SENIOR EDITOR

On the outside, everything seems wholesome and almost shiny. We run our family farms with respect and good will, focused on productivity and efficiency.

In fact, as an industry, we're so good at it, more farms are hiring non-family employees, and there's increased gender and cultural diversity throughout the agricultural industry.

That has got to be a good thing.

Then I saw a crack. Last year a farmer in Manitoba mentioned to me that their large farm had been caught up in a sexual harassment complaint.

Although he had been able to resolve the situation in-house by using a mix of compassion and discipline, this farmer was suddenly very aware that their farm was at risk from the behaviour of their employees. And what he learned was that in order to mitigate this risk, they needed to show due diligence, and they needed to clearly explain what is acceptable behaviour and what is unacceptable, which is how they came to write a sexual harassment policy for their farm.

Sexual harassment includes unwanted sexual advances, or verbal or physical harassment of a sexual nature, but it can also include offensive remarks about a person's gender, such as about women in general

What? Sexual harassment on a farm in Canada?

The more I dug into it, the more it looked like a can of worms, wriggling with ugly words and slimy lawsuits.

In 2015, a high-profile case against a farm in south Florida captured headlines and highlighted the vulnerability of illegal migrant workers. I read on my laptop that five migrant worker women were awarded a judgment of almost US$17.5 million. Newspapers reported that three men, including two sons of the owner of Moreno Farms, were accused of rape, groping, and kissing, and they were also accused of threatening the women, saying they'd be fired if they refused to have sex with supervisors.

My first temptation was to stop reading. I thought, this must only be happening with illegal migrant workers in the southern U.S., right?

Dennis Cooper, a professor of dairy science and a former extension dairy specialist at the University of Wisconsin-River Falls, says sexual harassment on farms is more common than we would like to imagine. "I believe this a big problem on American farms," he says. "The stories I have heard, the lack of awareness of sexual harassment on the part of farmers and employees, and the isolation and remoteness of many farm workplaces… "

In fact, Cooper thinks this issue is so important, he devotes several class periods to the subject in his agriculture human resources management course at UW-River Falls, including one class that is conducted by a campus colleague who is expert on the subject and stays current on relevant case law.

"Sexual harassment occurs as commonly or more commonly on farms that employ women compared to the typical non-farm business," Cooper says.

Cooper believes it's a bigger problem in agriculture because it's often swept under the rug: "I am quite

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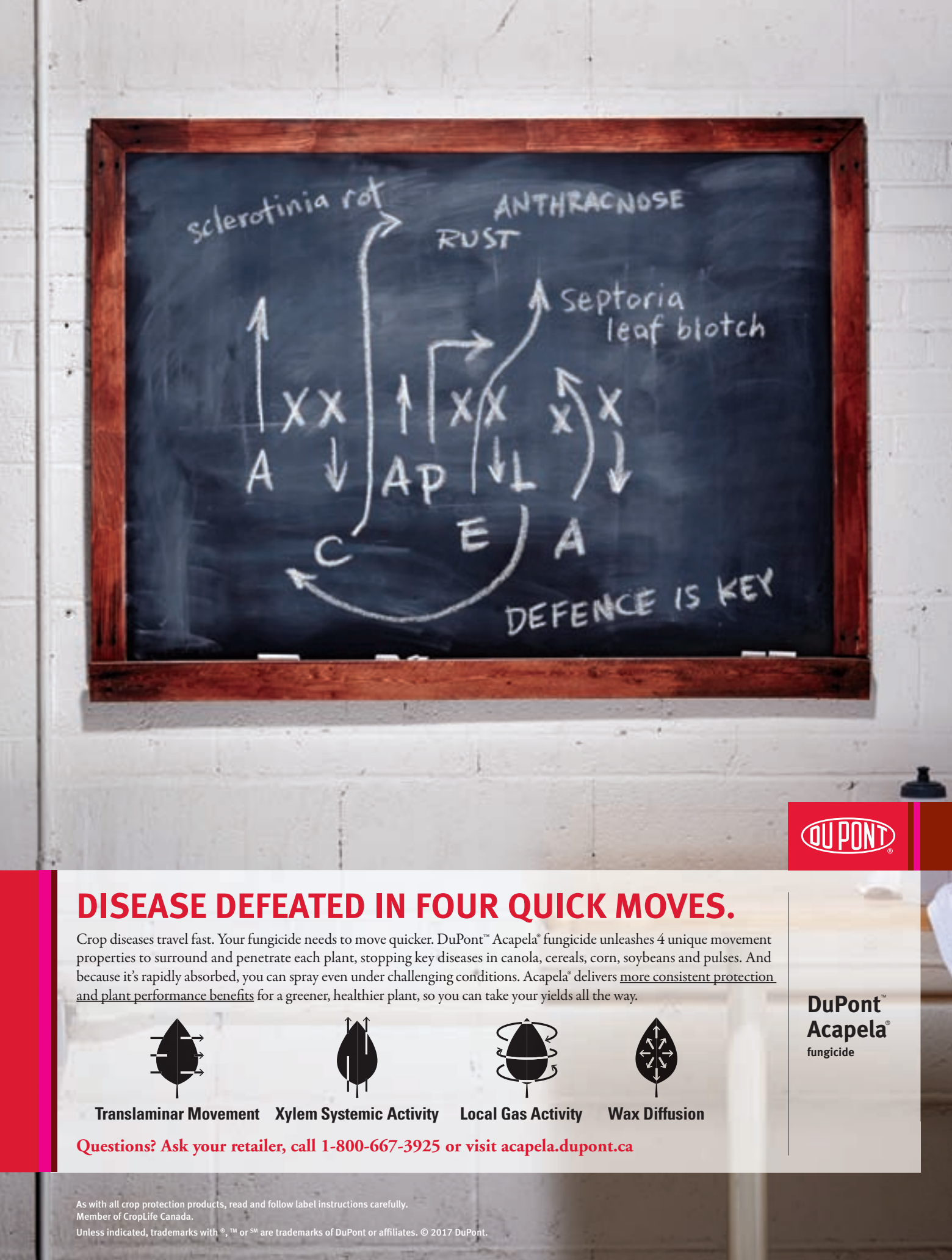

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concerned about it, mainly from the horror stories I have heard from former female students about their experiences as workers and managers on farms."

Cooper says that few farm employees are even aware that they're entitled by law to protection from sexual harassment, and that their employer is obligated to provide that protection. "Many farm employers are equally unaware of these legal obligations and, by their failure to comply, put their employees at significant risk of sexual harassment and their businesses at enormous legal and financial risk," says Cooper.

Farmers and employees also need to understand that harassment happens to all genders, ages, sexual orientations, and ethnic and religious backgrounds, and that it can occur between all employees — workers, owners, managers, supervisors, or even to those selling inputs or services to the farm.

The victim and/or harasser can be a woman or a man, and the victim and harasser do not need to be of different genders.

In general, sexual harassment includes unwelcome sexual advances, requests for sexual favours, or verbal or physical harassment of a sexual nature. However, sexual harassment can also include offensive remarks about a person's gender, such as about women in general.

Although simple teasing and minor, isolated incidents are not unlawful, it quickly becomes unlawful when it creates a hostile or offensive work environment.

Cooper encourages business owners and managers to learn what their organizational liability is for sexual harassment, and how to demonstrate reasonable care to prevent it. Although there are shared legal elements in the approaches adopted by most states, provinces and countries, every jurisdiction's laws and definitions are likely to be unique to some degree, so any business's harassment policy must reflect the laws applicable to its location.

The core idea to internalize is that your most important first step is to develop and institute a sound policy on sexual harassment, says Cooper.

He encourages his students to seek out and download sexual harassment policies online, and then adapt the content to their own situation. In class, he has used the policy of his own university (www.wisconsin.edu/regents/policies/sexual-violence-and-sexual-harassment/).

"Combine these examples with overviews, principles and procedures from experts to come up with a template," Cooper recommends. "Then I encourage students and producers to use these resources to write their own policies in accordance with applicable laws."

Canadian Agricultural Human Resources Council's online toolkit has one such template that you can find at hrtoolkit.cahrc-ccrha.ca/membership-account/membership-levels/. (Although you have to buy the whole $99 toolkit, it covers everything from recruitment to setting wages to the legal obligations of employing someone.)

Jennifer Wright, senior human resources adviser with CAHRC, says it's best practice for all employers to have a policy that clearly addresses sexual harassment, and the policy should be posted in a place that's easily accessible and visible to all employees.

This policy should include stated commitments by the employer to provide a safe and respectful workplace to all employees, along with the right that all employees have to a safe, positive, respectful work environment, free of harassment and discrimination.

The policy should clearly state that the employer has zero tolerance for any harassment or discriminatory behaviour.

Wright says the policy should also define what constitutes harassment and discriminatory behaviour, and it should include an outline to follow if an employee feels they've been harassed or discriminated against on the job, as well as links to the Human Rights code.

It's important to explain that any employee who commits such harassing or discriminatory behaviours will be subjected to specific management actions, says Wright.

Plus the policy should state that the employer has a duty to accommodate the complainant, and describe who's responsible for that process.

This link will take you to an agricultural example, although please note that this is not legal advice. Your policy will have to take into account your jurisdiction and the nature of your operations. But this gives an idea of idea of how a policy might be structured. (porkgateway.org/resource/understanding-sexual-harassment-for-the-on-farm-workplace/)

To give you an idea of how simple it can be, the policy goes something like this:

It is the goal of (Farm Name) to provide a work environment free of tensions involving matters which do not relate to the (Farm Name)'s operation. The (Farm Name) strongly disapproves of any form of harassment including but not limited to ethnic, religious or sexual harassment involving any of its employees. Actions or remarks involving ethnic or religious animosity, or conduct of a sexual nature will not be tolerated. Employees, without fear of reprisal, have the responsibility to bring any form of harassment to management's attention. Complaints concerning harassment will be investigated by (Farm Name) promptly in a confidential manner and the results will be reviewed with the persons involved. Disciplinary action, up to and including discharge, will be taken against any employee engaging in any form of harassment. Employees, without fear of reprisal, have the responsibility to bring any form of harassment to management's attention. **CG**

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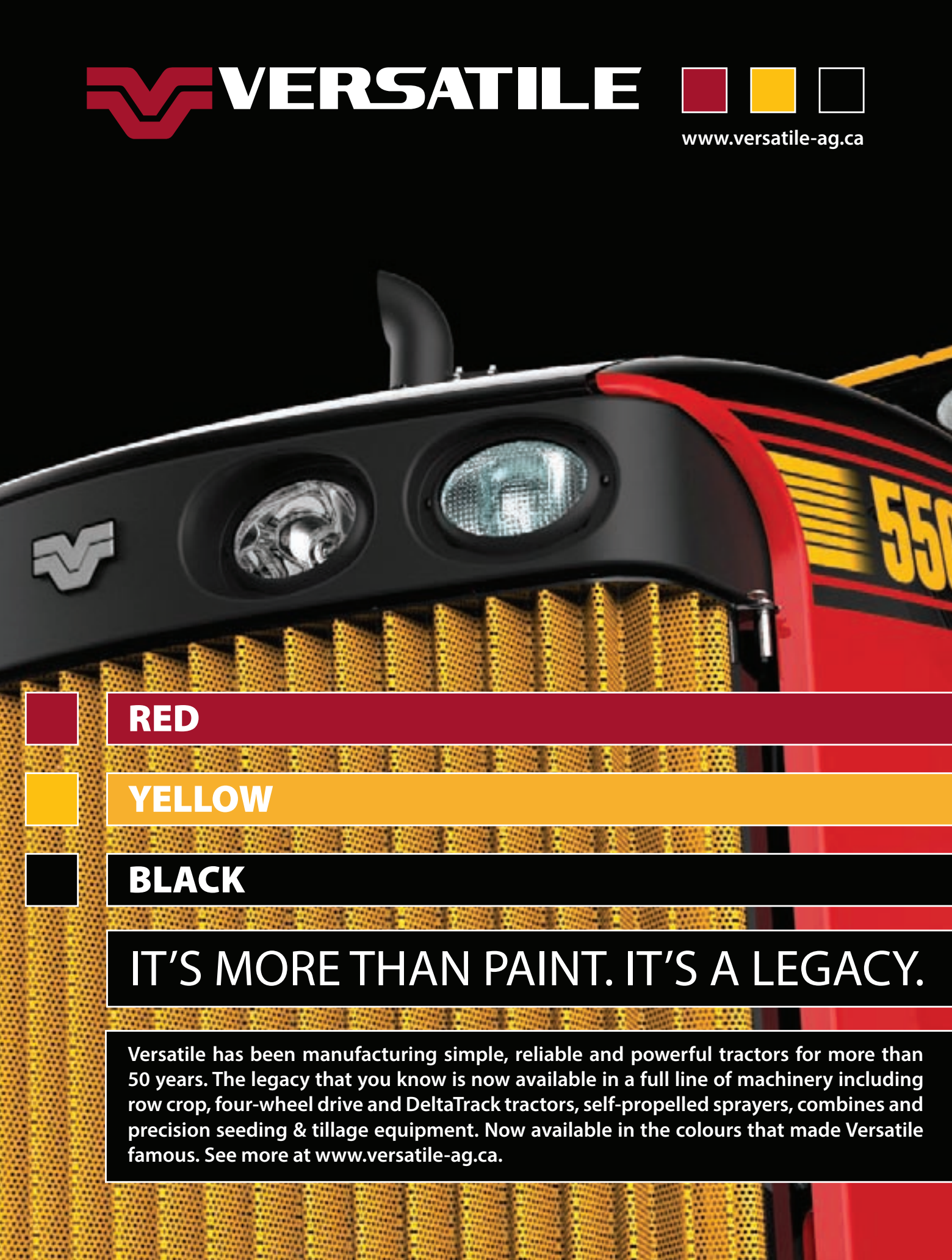

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PHOTOGRAPHY: DANIEL WEYLIE

THE CHALLENGE OF OPTIMISM

A look inside a modern Ontario hort operation finds a farm family wrestling with issues that may soon dominate the farm agenda coast to coast

BY ANGELA LOVELL

Some days, farming is more fun than others. Although he's driven by a belief in agriculture, and although he's working hard to keep building their farm enterprise, Shawn Brenn, president of Brenn B Farms Ltd. at Waterdown, Ont., admits there are also days when the frustrations can make him wonder.

Every farmer knows the feeling. The question is, does everyone else who works on the farm know it, or everyone who does business with it?

"The days that I want the farm to be a lot smaller are generally days that we have compiling issues such as breakdowns with equipment, new regulations being implemented, employee issues, or retailers flexing their muscles," says 38-year-old Shawn. "They all can be very demanding."

"It's frustrating." he adds, explaining by example. "When we suddenly get a price increase from our suppliers because the exchange rate has pushed their raw input costs up, we can't go to our retail customers and pass that cost on. I still have to price our products competitive to the market."

Then there are also the shifting regulatory burdens, like new or modified food safety policies or product reviews from the Pest Management Regulatory Agency that seem to be imposed sometimes without any real idea of what they mean for the farmer.

"These things can have a massive impact on our ability as producers to grow crops that meet aggressive, chain-store quality expectations, which are often stronger than those of the Canadian Food Inspection Agency," says Shawn.

"Or to top it off, we might receive a non-compliance charge if our truck happens to be late due to weather or traffic… the charge could range as high as $1,000."

When all those frustations rush in, one on top of the other, those are the days, Shawn says, when he steps back and thinks that farming isn't as much fun as it used to be.

Yet Shawn is also an optimist. He wants to maintain the strong farm legacy that the family has built over four generations, and he is convinced the agricultural sector is in a good position. While he believes there will always be struggles, he also believes the future is going to offer up a lot of opportunities.

"The next generation is going to see the population boom and more of a demand for food," Shawn says.

So it all boils down to one question: how does he organize the farm to deal with the complications that arise today while keeping it pointed toward what he is sure will be a better future.

It's a question he's given a lot of thought to.

KNOWING WHAT'S ON PEOPLE'S PLATES

Shawn, his brother Chris and father, David, run a number of different businesses on the farm, including potato production, a processing plant, and a packaging facility. They sell fresh potatoes to retailers and wholesalers, and also provide processed potato products to various customers.

"We started experimenting with processed potato products because we were trying to find a home for byproduct potatoes back in the early 1990s, so we began peeling and processing some of our byproduct," says Shawn. "Every year it just grew, and now we grow around 300 acres to process ourselves and we contract another four million pounds with other growing partners."

CONTINUED ON PAGE 14

The Brenns are good at identifying new marketing opportunities and they keep a close eye on eating trends so they don't find themselves stuck in a rut. "We used to grow broccoli, sweet corn, cabbage, and cauliflower but every generation that comes along analyzes the business, and looks at the demographics and realizes that there's a change in people's buying and eating patterns," says Shawn.

So, in addition to the 900 acres of grain crops they plant to support a healthy crop rotation, they also grow Swiss chard, parsley, dill, arugula, spinach, bunching beets and cilantro.

In other words, flexibility has become a cornerstone, and no opportunity gets ignored, even if it means looking at a crop they've never seen themselves as growing. Every year they experiment with a couple of new crops, and it doesn't always work out. Last year they grew eight acres of celery, which they won't likely be doing again, but they're always open minded about what they can add to their crop portfolio.

It's a tradition that began in the 1940s when Shawn's late Grandpa Carl took over what had basically been a subsistence farm run by his great grandfather. Grandpa Carl began to produce more food than the household

needed, and took the surplus to the Hamilton Farmers Market to sell. Although potatoes have always been a staple of the farm, Grandpa Carl also grew crops like sweet corn and strawberries, and raised mixed livestock.

When Shawn's dad, David, took over in the late '70s, he was responsible for ramping up the potato acres, delivering to more than 100 stores. At this time, David also started growing cauliflower, cabbage and peppers, while increasing the sweet corn production in line with the eating habits of the day.

Then came the next generation, with Shawn earning diplomas in both horticulture and agricultural business from the University of Guelph, and he and his brother Chris becoming majority owners of the family business alongside their father.

While Shawn handles the business side of things, Chris does the farming.

They started buying into the business shortly after completing post-secondary education and are still in the process of executing a fairly complex succession. It's a work in progress that often takes a back seat to the needs of the business, and wouldn't be possible without the

CONTINUED ON PAGE 16

Increasingly, the Brenns' success hinges not just on family members, but on attracting and retaining the best employees. That means creating jobs those employees want to have, Shawn says.

flexibility of their parents, David and Wendy, who are both still active in the business. Shawn says he and Chris both appreciate the experience, knowledge and value their parents continually bring to the farm.

Once she had started a family, Nicole, the youngest of the Brenn siblings, also decided to come back to the farm after working for a bank for a number of years. She heads up the quality control and food safety programs and is beginning to assist her brothers with other management duties that are crowding their schedule.

FLEXIBILITY IS ESSENTIAL

Keeping all the various businesses going on the 1,850-acre farm requires a lot of people. Last season they had 44 temporary foreign workers, 20 full-time staff and about 10 seasonal people from April to December. Managing all those employees presents a number of challenges.

Employee flexibility — including family members — is essential for the farm to function year-round. In the late spring and early summer, the processing side of the business, which goes under the company name of Brenn B & Company, is busy with processed potatoes for the barbecue season, when demand is highest. The new crop potatoes are ready late July or early August, so employees from the processing plant often need to overlap into packaging when harvesting is in full swing.

Shawn attempts to move some staff between companies and different areas of production to better utilize the staff and help maintain full-time hours. However, he quickly realized this was more problematic than he'd originally planned, and it didn't always work out the way he'd pictured. Some staff became accustomed to shorter days and welcomed the transition into different areas only when it worked out with their personal schedule. This proved to be very challenging and hard to manage.

As a result, Shawn has started writing job descriptions (see story, page 18) to make roles and responsibilities for employees clearer. "When we are writing job descriptions, they have to be worded so that employees understand they're going to have production responsibilities in both companies," says Shawn. "I have found these job descriptions difficult to prepare and even more difficult to implement. Agriculture is very different from most other industries. We rely heavily on Mother Nature to deliver to the bottom line, and in the most challenging years, when employees work the hardest to achieve specific goals, Mother Nature can quickly ruin it."

It's not always possible to measure performance goals through results, says Shawn, but rather on overall business improvement. "Some people believe they are entitled to a wage increase equivalent to that of the cost of living every year," he says. "If the farm could simply increase our cost of goods sold equal to that of inflation, things would be much simpler, but unfortunately this is not the case in farming or a lot of other businesses."

Part of the rationale for creating job descriptions was to open up an avenue to do individual employee evaluations. "I can sit down and say this is what's happened over the year, this was your job description, this is what I thought you did very well and this is what I think needs improvement," says Shawn. "That's the linkage that I haven't got to yet; we do have informal discussions, but it's about so much more than just the job responsibilities."

Shawn knows it's important that employees share the family's vision for the business, and it's important too that they have space to grow, and feel engaged and invested in the company.

"When I was younger, I had a hard time trying to put a plan in place that would give an existing employee room to grow in the company," says Shawn. "We're now to a size that I can see that more clearly, and I understand continued growth will make this goal realistic. I never want to lose a team member, and not having a long-term plan can sometimes be daunting."

So he has a set of objectives for building retention. They include making their companies a fun and enjoyable place to work, keeping up with current technology that helps the team be successful, and working with employees to give them the right balance of supervision and responsibility to help them love their jobs.

"It's is a scary retention plan," Shawn admits. "But at times it may be the best you have."

QUESTIONS ABOUT THE FUTURE

Shawn has learned to look at the whole farm on a cost-average basis. "We used to look at profitability on a load-by-load basis and say well, we can't sell this load of potatoes because it's flirting close to below cost," he says. "You just don't always have the flexibility to sit on a load and hope to get more from somebody else. You need to look at it as a cost average throughout the year. We try and work with our customers as best as possible and there's certain times where you know it's just not the best deal, but perhaps the best deal on the table."

Now, that same sort of sophistication is coming to dominate all aspects of their farm and financial management.

Even so, Shawn and his siblings have many questions about the future and how the farm will evolve given the fact that their business environment has changed considerably over the years.

"You used to be able to grow and sell what you wanted, but that's not the case anymore. If you are growing fruits and vegetables and dealing with retailers, it's a very structured environment now and it's extremely difficult to gain market access," says Shawn. "I don't know that I necessarily want to get our farm a lot bigger. We're close to 2,000 acres now, and a lot of our production is spread out over 26 different farms, and we only own a few of those, so land rent is an ongoing battle."

As much as securing land is a yearly challenge, going out and buying new land doesn't always provide the best return on investment, says Shawn. "Land is a solid, long-term investment but it does nothing to improve cash flow," he says. "We have to look at the risks, and land is one of those risks. If we don't have land, we can't do what we do."

Access to water — so crucial in vegetable production — presents another challenge and may well be the determining factor in whether the farm invests in more land or not. "It's impossible to have irrigation on 26 different farms; it's just not financially feasible," says Shawn. "You can't go and dig a pond on someone else's farm, get a permit to pump water and go buy the irrigation equipment for 26 different farms; it will never happen. So we're hugely at risk by dryland production."

To mitigate some risks, Shawn says finding land closer to the home farm with access to water will help. "Minimizing risk whenever possible and continuing to experiment with varieties that show some dry land promise are all key focus points for us," he adds.

OPTIMISM WINS

Shawn has three children — Alisha, 14, Addison, eight, and Charlie, already the diehard farmer, is six. "Every single day he gets off the bus, he calls me and says, 'what tractor can I go in? Is the combine running?'" Shawn beams. "I would love to be in a position to see the next generation carry on the family legacy. In addition to my kids, my brother has two and my sister has two, and to see them carry on the tradition in some capacity would be pretty awesome."

"Margins are generally pretty tight in agriculture and most people would ask why we keep doing this year after year," Shawn acknowledges. "To me the challenges associated with farming will never end. Overcoming the challenges as they are presented is a rewarding accomplishment in itself, but seeing a beautiful crop of spud roll off the end of the harvester, packed and delivered… when this happens, it all seems worth the grind." **CG**

Job descriptions:
The right HR tool for our farms

"Self-efficacy" is a concept worth learning for farmers who want to manage their way to better farm productivity

BY ANGELA LOVELL

"It's different than self-esteem," says Sara Mann, of the University of Guelph. "Self-esteem is your overall belief in yourself. Self-efficacy is task specific… it's the belief that you can actually do your job."

Self-efficacy is an idea whose time is right, says Mann, who has trained over 120 farm owners and supervisors on how to more effectively manage employees as part of an OMAFRA-funded research study.

"Self-efficacy one of the top motivators for individuals," Mann says.

And for farm managers, she says, it's also actionable, with results that are worth the effort.

In its way, it could hardly be simpler. Self-efficacy starts with the employee being confident they understand the job they have to do. So the recommendation for farmers is to develop job descriptions than ensure employees know those jobs, and that everyone is on the same page.

"Only then can a person work on having a high level of self-efficacy," says Mann.

Job descriptions still aren't high on the agenda for very many family farms. Even so, farmers who recently participated in focus groups to help the Canadian Agricultural Human Resource Council (CAHRC) develop its National Occupational Standards for different sectors of the industry came away excited at how useful the tools could be to their own farms.

"We had people who said: 'I need this on my farm,'" says Jade Reeve, manager of agri-jobs research and tools at CAHRC.

"Sometimes the formal HR process can be intimidating," Reeve says. "Farmers are busy with their operations, so they were happy to see the templates we developed for them and to see it's not as hard as they imagined it to be."

"Often, says the University of Guelph's Susan Mann, farmers don't write job descriptions until they get into legal trouble that job descriptions could have kept them out of

MAKING EXPECTATIONS CLEAR

A job description is a valuable tool for farm managers, family members and employees because it helps to articulate expectations This creates clear parameters for the job, and also identifides the knowledge and experience needed to fulfill that role.

"It's a good starting place to ensure the family member or employee has the training they need for the position," says Reeve.

In recent years, a series of agricultural management training programs have been emphasizing the importance of HR strategies and tools like job descriptions and performance appraisals. One of these programs is Canadian Total Excellence in Agricultural Management (CTEAM), and CTEAM instructor Julia Christensen Hughes, dean of the College of Business and Economics, University of Guelph, says she is encouraged by how many family farms have adopted HR policies and how effective they have been.

"In some of my discussions with farmers, around the topic of job descriptions in particular, I've been pleasantly surprised by the number of farms that report having them and they speak about how incredibly helpful they've been," Christensen Hughes says. "The farms that implement job descriptions realize how much misunderstanding and confusion there has actually been about people's roles, which has been causing conflict in some cases."

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HOW THE BRENNS GOT STARTED

Shawn Brenn would be the first to recognize that his team of employees are fundamental to the success of Brenn B Farms, the fourth generation family farm that has an employee pool during peak season of 75 people. Brenn feels that job descriptions are vital for medium- to large-scale farm operations. "As our business increased in size, it became apparent that we needed to create some formal structure in order to meet the changing demands of our business" says Brenn.

"Our workplace has always been flexible and very family oriented but we had a couple of past employees who felt as though their work schedule should change frequently based on their personal schedules," says Brenn. "In turn, I felt that the morale of our employee group was starting to shift in a negative way. I blame myself for not taking appropriate measures. We did not have the proper job descriptions and documentation in place to performance manage."

Brenn started by creating an employee handbook so that everyone was aware of the company's expectations and policies. "We wanted to be employers who, if someone needed to go to the doctor or wanted to watch their child's school concert, we would try to accommodate their request but also ensure the needs of the operation were met," he says.

Next, the business developed job descriptions. The idea was sound but the task of sitting down and writing job descriptions was daunting.

"There are not enough hours in a year to write job descriptions for everything that gets done on the farm," says Brenn. "I met with each employee and we worked on the job descriptions together. We wanted to make the job descriptions list specific tasks yet leave some flexibility to assign other duties."

That flexibility is especially important on the farm, he says. "There will be times when you cannot do your main tasks due to weather so we're going to want you to do some work in the shop or packing/processing operations. Some days it is all hands on deck to fix a breakdown or get an order out, and we need that flexibility and commitment from our team members, and they are always good with that."

THE STEELES ADOPT A COACHING TOOL

After taking CTEAM five years ago, John and Eadie Steele decided to implement job descriptions on their family-owned sheep farm near Norwood, Ont. They began with a detailed job description for the temporary foreign workers they employ each season. It clarifies tasks and helped form the basis for an employee manual.

"Our employee manual has a whole bunch of operating procedures and other things, and the job description we wrote is almost like the index to the standard operating procedures for each month and for each task," says John Steele. "We thought, we've got the job description, so why don't we cut and paste it and drop it into the manual and set out all the things an employee will be doing."

Steele believes firmly in the value of having both job descriptions and an employee manual. "If staff need a reminder about something, we can say go and look in your employee manual. It's a go-to, and it helps with performance reviews because you can say, as outlined in our employee manual, these are the ways that you are expected to do this task," says Steele. "It's a coaching tool, and we can add anything to it that we think is helpful. For example, for our foreign temporary workers, we include things such as, 'This is what poison ivy looks like and don't touch it.' There are all the important contact numbers for people like the veterinarian, mechanics, the guy that fixes tires, so that when we are away things can carry on."

The manual also has maps of the farm, with the names of every field and how they all relate on an overlay map so new employees can orient themselves and not get lost. "We farm 17 different parcels of land and it's quite complex to find your way around the township and find the properties," says Steele. "Now all the employee has to do is take a photocopy of the map, put it in the front of the truck with them and they've got directions."

FOUNDATION OF THE HR STRATEGY

Job descriptions are foundational documents that can provide the basis for other tools that define the HR strategy and, in some cases, the overall organizational structure and culture of the farm business.

"It allows you to do a performance appraisal, develop interview questions, and develop a pay system. It's the foundation of everything that you do from an HR perspective," says Mann.

Unfortunately, many employers don't realize they need a job description until there is an employee problem. "Maybe it's some sort of legal issue or somebody's not performing, then all of sudden the issue of job description comes up because the employer wants to do a performance appraisal," says Mann. "It's very rare, from my experience, to see a farm that is proactive enough to have job descriptions in place ahead of some sort of problem."

Yet without job descriptions, farmers can find themselves in a bad spot from a legal standpoint.

"If someone feels discriminated against or feels they've been dismissed for the wrong reason, the first thing you're going to be asked to produce are performance reviews and the job description," Mann says. "It's critical to have a job description because if you don't, it can put you in a situation where you may not be legally defensible."

The content of job descriptions varies depending on the type of operation, but they should be consistent for all employees, advises Mann. "It should be detailed enough that it's representative of the job and the same process should be used for every position in the organization, because being consistent in how you write job descriptions improves your legal defensibility if someone raises a grievance." **CG**

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A better workplace for women

In today's tight labour markets, a workplace that attracts women employees may give your farm the edge you're looking for

BY HELEN LAMMERS-HELPS

With the farm labour shortage expected to go from bad to worse all across Canada, farms that can attract untapped communities of job seekers may have a big advantage.

Which means women.

Women are Canada's largest under-utilized pool of potential farm employees. The numbers prove it. Women make up only 36 per cent of the employees in primary agriculture — and an even smaller proportion once you get outside traditionally female roles like bookkeeping, marketing, human resources, and some livestock jobs.

So, being open to hiring women might help ease the labour shortage on your farm. But would women want to work on your farm?

When there is a labour shortage, farmers need to differentiate their farms from other farms, says Dr. Sara Mann, associate professor of strategic human resource management at the University of Guelph. They need to ask what could make their farm more attractive to potential employees, and to think hard about concrete steps they can take to achieve that differentiation.

"It doesn't necessarily have to be monetary," says Mann. "It could be working hours, working conditions, or the farm's culture."

While many argue that good HR policies will attract both sexes, Michelle Painchaud, a Winnipeg-based executive coach and HR consultant who specializes in agriculture, insists farmers would be wise to specifically ensure their policies and culture meet the needs of potential female employees.

"A good first place to start would be to create a culture that is inclusive of women taking non-traditional roles, a culture that embraces change," asserts Painchaud.

Terry Betker, president of Backswath Management in Winnipeg, agrees. "Ask yourself what kind of place would make people feel safe, and put policies in place to create a respectful workplace for everyone. You have to walk the talk."

According to Canadian Agricultural Human Resource Council's (CAHRC) online Agri HR ToolKit, some of the offensive behaviours to watch out for include:

- Unwelcome physical, visual, or verbal behaviour.
- Verbal or practical jokes, insults, threats, personal comments.
- Touching, pushing, or any unwelcome physical contact.
- Sexual acts, comments, or propositions.
- Displaying offensive posters, pictures, or other materials in the workplace.
- Offensive attitudes, such as leering.
- Bullying or intimidating behaviour.

In addition to quashing these unacceptable behaviours, Betker recommends managers look around the shared common areas that employees use. Do you provide a lunch area? What kind of statement does it make? Are any pictures on the walls appropriate for everyone? Are the fridge and bathrooms clean?

The need for reducing sexism in agriculture is supported by the results of a 2015 online survey, Gender Roles and Equality in Agribusiness, conducted by AgCareers.com. Half of the women surveyed said they had experienced blunt sexism or discrimination in the workplace based on their gender.

There are several HR components that should be put in place to help ensure your farm is welcoming and inclusive. First, develop an employee manual that speaks specifically to a respectful workplace. This will make it easier to eliminate unacceptable behaviour, says Painchaud.

Also train family members and staff on the relevant clauses in employee contracts, and Painchaud recommends making sure everyone knows that disciplinary steps may be necessary for staff members who are disrespectful to other staff.

Since many women still shoulder the majority of domestic duties including childcare and elder care, policies that help female staff members create work-life balance are also helpful, Painchaud adds.

As well, clauses around offerings for maternity leave and flexible hours should be written into employment contracts. The desire by women for flexible hours and maternity leave, by the way, is also endorsed by both the 2016 CAHRC Supporting the Advancement of Women in Agriculture (SAWA) Needs Assessment and the AgCareers.com report on gender roles and equality.

IT STARTS AT THE TOP

Creating an inclusive culture starts at the top, says Cathy Mak, vice-president of HR and compliance at Lakeside Produce, headquartered in Leamington, Ont.

"If you don't have a supportive leader to integrate an inclusive culture, it's not going to get very far," says Mak. She says Lakeside Produce owner Chris Cervini, who has been hiring more women in a greenhouse sector that was predominantly male, simply does not tolerate inappropriate behaviour.

Cervini recently hired their first female greenhouse manager, and he hopes she will be able to advocate for other women and serve as a mentor.

Lakeshore employees are given some flexibility in their hours if they need to take care of childcare or other domestic responsibilities, and female employees are offered leadership development courses through the American Produce Marketing Association, which has specific streams for women.

Cervini emphasizes leadership development at all levels of the talent pool, says Mak, and women may be offered scholarships, mentorships or training to help them acquire new skills, including mechanics.

The opportunity to learn about machinery at a young age made the difference for Marg Rempel who has operated a grain and hog farm near Steinbach, Man., for 40 years. She got her first exposure to operating and maintaining equipment growing up on the farm, she says. "I learned how to do basic maintenance such as changing tires and cleaning an air filter. My father, who was a licensed mechanic, didn't discourage me from sticking my nose in while he rebuilt a motor either."

Later, when she had three young children, Rempel took a college course in large equipment operation and maintenance, and she says this course expanded her knowledge of good maintenance and operation practices.

Employers may also see a payback for offering opportunities for female employees to network wth each other and to be mentored.

When a farm has created an inclusive collaborative culture and flexible hours, these should be highlighted in a written Employee Value Proposition (EVP) to help recruit more women, says Painchaud. The EVP describes the mix of benefits and the appeal of working for an organization.

The EVP can then guide how you advertise and attract employees, and how you portray the farm during any interviews.

It should be fact-based, and can even include a quote or two from women working on their farm who can say they experienced a culture of collaboration and teams regardless of age or gender.

It's not "one size fits all," and it can appeal specifically to different groups of potential employees, Painchaud says. "The EVP should state that you embrace a diverse workforce, that you endeavour to help women grow their careers in the ag industry." **CG**

RESOURCES

Canadian Agricultural Human Resource Council (CAHRC) Agri HR ToolKit walks farm businesses through the steps necessary for ensuring an inclusive environment.
www.cahrc-ccrha.ca/resources/agricultural-hr-toolkit

Ceres Rising: How Women are Leading Farm Business by Jeanne Bernick and Michelle Painchaud.
www.ceresrisingbook.com/

The right mentor

More young farmers could get a career-expanding lift from a great mentor. Could that be you?

BY SHANNON VANRAES / CG FIELD EDITOR

As a lifelong farmer and accomplished entrepreneur, Alberta-based rancher and author Brenda Schoepp knows a thing or two about operating a thriving business. And it turns out she knows a thing or two about mentorship as well.

As a mentor, what she understands is that success isn't about giving young farmers the answers to their problems. It's about enabling them to find their own answers by challenging them to think critically about where they want to take their lives and their farm business.

"We will tease your mind, but we're not going to provide you with the solutions," says Schoepp who, as a Nuffield scholar, researched the creation of agricultural mentorship programs for women in developing countries.

"I might go as far as to say, 'I have seen this work,' but I will never say, 'you should,' 'you could,' 'it would be better if you did,' or anything like that."

This skill does take time to master, Schoepp says, but when properly applied, it enables mentors and mentees to avoid the biggest mentorship pitfall — a relationship where the mentor is focused on duplicating their own business and unable to identify or meet the mentee's needs.

"That is the real critical piece," says Schoepp, who currently mentors 40 people in several countries. "Our role as mentors is not to create someone who mirrors us, it's to empower someone to be who they were born to be and do what it is that they want to do."

Chris Bodnar agrees. The organic farmer from British Columbia has seen mentorships go south when mentors try to recreate their own business, or when mentees attempt to emulate their mentor's business.

"When you try to transpose that mentality of needing to do the same as someone else onto a mentorship program, it creates a lot of difficulty, because then the mentor isn't able to listen," says Bodnar, who works with the business-focused Young Agrarians mentorship program.

"You don't know everything about the farmer next door," Bodnar says. "You don't know how much debt they have, what their relationship status is like, what their stresses are like and so on. So you can't mimic them. They may have a completely different context than you do."

Bodnar adds that the first step to ensuring that neither party is looking to recreate an existing farm business is to match the right mentor with the right mentee. Then create a list of agreed upon goals.

But there is more than one way to connect with the right mentor or mentee. While programs such as Young Agrarians and Young Leaders, offered by the Canadian Cattlemen's Association, use application processes, mentorships outside established programs are possible and rewarding as well.

For Schoepp, connecting a young producer and a mentor can be more spontaneous.

"People are at different stages in their lives and you may be at a point in your life where you meet someone at an industry meeting or at the pub or at church, whatever the case may be, and you know you want to talk to that person," she says.

It's another thing she has learned: "when the student is ready the master appears."

That doesn't mean there aren't any formalities involved, Schoepp says, but knowing someone is the right fit for mentorship can sometimes be a gut feeling. From there, goals need to be set and both parties need to understand what the priorities of the mentorship are.

"I don't think there is one set definition for mentorship," adds Heather Watson, executive director of Farm Management Canada (FMC). "Ultimately, I think that it is really the relationship between the mentor and the mentee that is the inspiration that leads to learning, growing."

While FMC's STEP UP program was cancelled after a funding shortfall in 2013, the organization is offering what it learned from the popular program to anyone developing their own mentorship scheme. Watson says the key pieces of advice are that mentors and mentees must have an excellent rapport with each other, and they must share an understanding of what the mentorship will provide and how it will provide it.

The mentee also needs to be heavily invested in the process to benefit from the journey, Watson says, noting that a strong mentorship occurs "where enthusiasm meets experience."

For FMC, the process of matching mentors to mentees included face-to-face meetings where goals, preferences and timelines were established. Schoepp, too, begins the mentorship process with an in-person meeting, something she says is crucial to the mentorship process.

"My secret is I meet them on their home turf, during a meal," she says. "Because it's very critical that you are assigned a mentor that matches you, knows where you

Farmers like B.C.'s Chris Bodnar are becoming mentors in areas ranging from new crops to financial management. But in all those areas, Bodnar says, it's essential that the personal fit is good, and the expectations are clear.

want to go with your mentorship, who you are, who they are, and that sort of thing, so it is still really important to meet each other at some point in time — preferably right at the beginning."

THE FIRST MEETING

That first sit-down gives the mentor a window into how a mentee interacts with their family and their farm business, Schoepp says. It also provides a mentor with a good idea of what the mentee needs to work at in both life and business.

But those interactions are not an opportunity for critique or criticism, which the international mentor stresses is not the goal of mentorship.

"With some folks, to be honest, you can see what they have to address in the first five minutes of meeting them, but it might take them a year to come to that point themselves," explains Schoepp, emphasizing the role of a good mentor isn't to point out trouble spots, it's to guide an individual as they come to understand themselves better.

"In a way, they already know what it is they need to address, but they don't have the confidence to go there yet," Schoepp says. "And if I were to say that, to point it out, before they discover it, it will never happen and you end up maybe having a negative effect on that person's future growth."

Watson adds that the first meeting between mentor and mentee should also be the beginning of the goal-setting process. Ideally, the young producer will list what they want to accomplish during the mentorship and establish a timeline of regular check-ins to see if those goals are being met.

Bodnar agrees with it all. "Having structure is really valuable, because a lot of time in business, mentorship is more informal, someone will approach someone else they admire or who is doing something they like, and ask if they will be a mentor, and in that regard the mentor doesn't, or may not actually know what is involved in being a mentor, and the mentee may not know what they want to get out of it," he says.

Bodnar adds that some of the most rewarding experiences he's had as a mentor are when the person he's mentoring hits the reset button partway through the experience, because the mentorship has brought

CONTINUED ON PAGE 26

Go outside the family

Most often, choosing a relative is the wrong way to pick a mentor.

As tempting as it might be to combine kinship and mentorship, experts say fresh eyes and ears can bring new perspectives in a way that dear old Dad or your auntie just can't.

"You want to choose the best person and not just default to your family because it's easier," says Heather Watson, executive director of Farm Management Canada. "Often times in farming and specifically family farming, we talk about all the different hats that people wear — you've got your farmer hat on, your parent hat on, your aunt or uncle hat on, your cousin hat… and possibly even your 'mediator of the family' hat on, so whatever the family dynamic is, it definitely has an effect."

Often someone within the family has too much baggage, or they may be too invested in a career or business to offer effective mentorship or formal guidance.

"It goes back to the idea that you can choose your friends, but not family," says Watson, adding that if you can choose your mentor, so much the better.

Brenda Schoepp has studied mentorship programs and says it is absolutely essential to have someone outside of your family fill the mentor role.

"This is really critical, because if you are all living in the same space, and you say well my dad, or my mom, or my uncle is my mentor, you are already in a situation where they are trying to create someone who mirrors them or their business, and you do not want that," says Schoepp.

Besides, adds Schoepp, you may be missing out on some of the biggest reasons why you should be looking at a mentorship in the first place.

"A lot of folks on farms have mentors that don't have any farming background at all," she explains, "because their desire may be more on the personal development side, or it could be on the business side, so we see a lot of that."

Ultimately, the goal of the mentor is to liberate a person's thinking and inspire a mentee to move towards new ideas, she says.

But in a family situation where both mentor and mentee may have a current or future financial stake in the same business, discussions can often devolve into disagreements about which direction the farm should head in.

"The mentee would not be liberated in that case," says Schoepp.

However, that doesn't mean knowledge and attitudes aren't passed on from one generation to another. It's just that expecting a family member to facilitate personal growth and provide on-farm guidance without bias is unrealistic.

Watson says within every family there is an undefined and informal mentorship that can yield both positive or negative results, depending on the circumstances, but that it doesn't replace the benefits of having an objective mentor without family ties.

Young farmers need to be encouraged to try new things and take risks, without having the pressure of the family farm in the back of their mind, Schoepp says. "It's just dicey to rely on someone wearing all those hats."

them to a new realization about their business. Setting the stage for that experience, however, requires a mentorship structure flexible enough to let either party hit pause and re-evaluate, but formal enough to have regular meetings about the mentorship itself so that changes can be made as it progresses.

To that end, Farm Management Canada makes use of a "learning contract" where mentees outline what they are hoping to take away from the experience. The mentor then says yes, I can work on these things with you, or no, this is outside of my purview.

"We didn't want to make it too complicated, but we ask for the mentee to put down five outcomes that they are looking for in the mentorship, and then we get them to agree to the goals and what the mentor can provide," says Watson. "Then that would be used to guide the process."

The learning contract should also outline a process for regular meetings to discuss the mentorship and make adjustments. In the case of the FMC mentorship program — which included at least eight weeks of on-farm experience — it also allowed participants to take a step back from day-to-day operations and to re-examine their progress.

"They would obviously be together a lot of the time, but then they would also have these meeting to come together and specifically go over how things are going in terms of meeting those targets. That's the time to ask, are there things that are still missing or that we are concentrating too much on? Are there any gaps?" says Watson. "You really want to give a sense of being grounded and be able to look back at the end of a mentorship and say, 'okay, how did we do?' And hopefully you will meet and even exceed your expectations by having those preliminary conversations."

And nothing should be off the table when it comes to mentorship, Bodnar says, even if a farm mentorship pushes someone away from a career in farming.

"Sometimes I look at it like a marriage prep course, and the best outcome of a marriage prep course is that some people decide not to get married… likewise in mentorship," says Bodnar. "Sometimes you realize that you don't really want to continue with farming or that you don't want to continue with the direction you're taking at that point. Maybe a different business altogether is right for you."

TACKLE THE TABOO TOPICS

Bodnar also believes that a successful mentorship, particularly in business, requires that both participants be at ease discussing something still seen as taboo or impolite — money. In his experience, being able to openly discuss issues around finance is the best way to get young farmers and business owners past the feelings of anxiety they have about taking on debt, filing taxes and complying with regulations.

A good mentor will also be able to point a mentee towards technologies, resources and even coaches that will help them tackle the nuts and bolts issues that are holding them or their business back.

"I myself realized really quickly that if you look at the records you need as an administrative burden, you're missing the fact that these are records that every farmer should have," he says. "So you take them and say, 'You know you don't have to go and invent it, it's all there'… and that is when you see the lightbulb actually go off, when people see the kind of reports that you can create and that there is a system there and you can help them get into it."

Just knowing that they have a mentor to reach out to when they hit a roadblock can help young farmers move forward, says Bodnar. And once a mentorship is established, that act of reaching out can be as simple as sending a text message.

Watson says new technologies can be a boon to mentorship, once the initial contact and rapport is established. Skype, FaceTime, Facebook, phone calls and email are all tools that help facilitate a successful relationship.

"Mentorships can happen at a distance," says Watson. "It is still best to meet face-to-face, but there are some mentorship relationships where you never actually meet the person… so mentors can take various shapes and forms, and mentorships can have different formats," Watson explains.

Schoepp says she relies heavily on phone calls after the initial period of getting to know a person, but finds it works best if calls are scheduled in advance.

"That way the mentor knows they have the time to talk, to listen, and the mentee has had time to think about what it is they want talk about," she says.

How long a mentorship lasts depends on several factors, but at the end of the day Schoepp says the relationships are often lifelong.

Ultimately, the goal is to leave mentees with the confidence, skills and contacts to do what they wanted to at the very beginning, says Schoepp.

"You do need to have an end time, a time where sort of the formal mentorship comes to a close, but often the mentor and the mentee continue their journey together," she says. "What I find is that by nature, after a couple of years, I'm not needed anymore, and that leaves space for another person." **CG**

Shortline prospecting

Shortline railway companies are creating new opportunities for farm commodities, and for farmers too

BY ANNE LAZURKO
CG CONTRIBUTING EDITOR

Operating a shortline railway in Western Canada isn't an easy proposition. Over the past 20 years, many companies have come, and ultimately gone, after trying to revive lines that CN and CP had abandoned in their waves of rationalization.

But now, a move from single-farm producer car loading to higher-volume sites might become the key to sustainable success for shortline railway companies, especially if it is combined with diversification in operations and commodities.

Today there are 50-plus shortlines in the country and, according to the Railway Association of Canada, they ship over $20 billion worth of freight at a cost of about three cents per kilometre for one tonne of goods.

Impressively, in 2010 shortlines shipped 23 per cent of all carloads.

Saskatchewan has perhaps the largest and most cohesive shortline systems in the country, such as Great Western Railway in southwest Saskatchewan, a locally owned shortline that runs 375 miles of track and 40 siding locations, and that ships over 6,000 cars annually. It services the most producer loading sites in Canada, as well as two crude oil loading facilities.

The company also works on a yearly contractual basis to service 60 miles on the Fife Lake Railway and another 72 miles of the Red Coat Road and Rail in the southeast.

"That was a dog of a line in 1992," says Mark Hemmes, referring to the line before GWR took over. Hemmes is president of Quorum Corporation, an agency appointed by the federal government in 2001 to act as monitor for the prairie grain handling and transportation system.

"There was no volume on it and the grain companies were bailing," Hemmes recalls. "But they came in as a private operator with a producer mindset to support local. They've also been able to keep mainline grain companies on their tracks. Great Western Railway is a good model."

But still it ain't easy, according to general manager Andrew Glastetter, who says the company is constantly turning over rocks to look for new opportunities to make a dollar. Aside from their primary business of moving grain, GWR services the potash and oil industry with storage for 2,000 cars, and it is building relationships with other companies for storage. They've also made arrangements to rail sand for the Saskatchewan oil field from southern Alberta into Moose Jaw.

"We focus on our core commitment to service local farmers," says Glastetter. "But we have capacity on the line and we need to find ways to use that capacity so that in the soft grain years, we have ways to stay financially viable."

And let's not overlook that the local farmer has changed as well. While there are still instances of single auger sidings that ship in one or two car spots, the bulk of deliveries are now consolidated at elevator points, often with companies new to the industry. Glastetter says the biggest change

Saskatchewan's boom in pulse exports and canola more than makes up for the tonnage lost to declining cereal production.

PHOTOGRAPHY: JON GILLIES

For Superior Pulses' director Faisal Usmani and president Noor Faridi, shortlines let them work right where the crops they sell around the world are produced. See page 34.

he's seen is a boom in pulses. A drastic drop in durum shipments to the U.S. from last year to this has been almost entirely offset by traffic in pulses.

It's a common trend. In Western Canada, shipments of cereal grains declined 10 per cent from 2013 to 2014 crop years, but oilseeds and pulses more than made up the difference, according to Quorum's 2015 annual report. And while it might not be a boom, there are companies with the required entrepreneurial spirit and risk tolerance looking for access to new markets and setting up shop on the shortlines. (See Superior Pulses story.)

"They (small companies) are usually shipping four or five cars at a time so the Class 1 carrier is not interested," says Glastetter. "The shortlines can provide more intricate and detailed planning and switching… we have the flexibility to provide a high level of personalized service."

In contrast to many of the small independent elevators, which only operate weekdays, Great Western Railway moves cars seven days a week in order to meet the needs of the Class 1 companies CN and CP. While an individual site might only do four or five cars per day, GWR is moving 25 to 30, often moving several cars in a day to several separate destinations.

It's a lot of co-ordination, and the switching to various interchanges has to work with CP.

All cars are ordered by producers (or a line company) through the Canadian Grain Commission which passes them on to the shortline and Class 1 carrier. GWR will confirm with the Class 1 carriers and co-ordinate with them for supply and pickup. All are hauled under common carrier obligations and through shortline haulage agreements as set out by CN or CP.

"We need to be innovative, efficient and modernized, with a focus on the small- to medium-sized farmer in southern Saskatchewan. And we need to keep up with the Class 1. That's not going to stop," says Glastetter.

Mark Hemmes agrees. "It's always going to be a tough business. (Shortlines) don't have the luxury of

CONTINUED ON PAGE 30

large volumes and so are hurt bad by a bad crop. But the advantage of the shortline is that dealers have access to grain they might not otherwise get their hands on."

Hemmes cites the example of a deal in northern Saskatchewan with Quaker Oats that sees hundreds of cars moved on shortlines into the U.S. to serve that company. A niche kind of thing, as he says.

"The bottom line is (shortlines) are still dependent on producer loading, and this is shifting to high-volume sites," says Hemmes. "Shortlines will stay, but the trick will be efficient loading facilities. The old days of the guy with the auger and three-ton are gone. If they don't have efficient loading and railside storage it'll be a challenge."

THE STEEL HITS THE RAIL

A bit of history. Many shortlines began as an attempt to keep communities viable by servicing existing mainline elevator companies that provided good traffic at first.

Shortline companies such as McKenzie Northern, Carleton Trail and Hudson Rail acted as agents for the Class 1 lines, CP and CN. Haulage fees were attached to each station, but, according to Hemmes, as the mainline grain companies shuttered elevators along these lines, there was no way for the shortlines to manoeuvre in a commercial sense, and the money they received covered only operating costs.

Without cash for maintenance or capital costs, it was a slow death for many of them. And for the most part they were left to die.

But, early on, the Saskatchewan government took a different approach that might be paying off in ways that couldn't have been predicted. The shortlines there were seen as a way to keep trucks off the road and to save on highway infrastructure, says Hemmes. The government provided low interest loans to shortlines and acted as guarantor.

It seems it was a fortuitous decision, especially as the oilfield opened up and more oil was moved by rail.

According to the Saskatchewan Shortline Railway Association, with a combined expense budget of $31 million, 14 shortlines now operate on over 2,000 kms of track, or about 24 per cent of rail lines in the province. They run through 18 per cent of urban and 26 per cent of rural municipalities, employ 183 people and service 70 small- and medium-sized businesses, plus 79 producer car sites.

Over 10 years, Saskatchewan shortlines moved 215,000 railcars and 10 million tonnes of wheat.

Shortlines invest roughly 12 per cent of their annual revenues into maintenance of their own infrastructure, according to the Canadian Railway Association, while trucking companies operate on publicly funded roads

CONTINUED ON PAGE 32

With help from shortlines, Superior Pulses is bringing jobs and crucial infrastructure to rural Verwood

and highways. And if the CRA claim that a 10 per cent shift from trucks to shortlines would result in a 500,000 tonne reduction in greenhouse gas emissions is accurate, it might be something all levels of government want to support, given the federal commitment to emissions targets.

The shortlines are aware of their advantage and they are prepared to seize the moment. "We are not afraid to go to the government for funding," says the Great Western Railway's Glastetter. Citing the environmental benefits of rail versus truck and the savings to highway infrastructure, Glastetter says government should be supporting shortline construction and rail infrastructure, and it should also encourage increased traffic on the shortlines.

In fact, the SSRA submitted a full response to rail transportation recommendations from the current Canadian Transportation Act review.

SSRA is asking for shortline inclusion in a formalized policy around a National Freight System, a tax credit program to offset track rehabilitation and maintenance, the ability to apply for federal infrastructure money without a government sponsor, assistance to secure reasonably priced insurance separate from that required of the Class 1 companies, and federal support to address the costs of regulatory changes around safety.

But public funding and support are only one part of the answer. "They (shortlines) all still work on a commercial agency relationship with the Class 1 companies," says Hemmes. "They can't really market their services outside those parameters… and the Class 1s see the shortlines as gravy for them."

There is one recent exception. Mobil Grain, now owned by Alliance Grain Traders has managed to negotiate a rate structure with CN. Hemmes believes it's working quite well and sees it as a test case. "If the negotiated rate structure works, it might give shortlines more stability and power over their company."

"At the end of the day, it's about how much money you get for each car you move," Hemmes says. "They need to squeeze more money out of the Class 1 companies to make a margin. If they're beholden to the Class 1s indefinitely, there's likely a clock on them."

Saskatchewan's 14 shortlines now control 2,000 km of track, and in the last 10 years shipped 215,000 railcars of wheat

The shortlines recognize their tenuous position. In its response to the CTA review, the SSRA is asking directly for rate protection for shortlines, and also asking that careful consideration be given of the proposed elimination of maximum revenue entitlement (MRE) provisions.

As much as short lines are independent operations, Hemmes says, many operating elements are at the mercy of the Class 1 railways. For example, car supply, schedule and rate structure are dictated by the Class 1s. As well, there are currently no arrangements or limitations for the rate relationship between short lines and Class 1s, as there are between shippers and Class 1s.

"Creating a protected rate for shortline operators increases the likelihood that grain will start its transit by rail closer to the farm, protecting the environment, public roads and middle class jobs" Hemmes adds.

The SSRA goes on to compare single and multiple car rates between MRE and non-MRE routes, citing in one example a 229 per cent spread per mile on non-MRE routes for small shippers.

While shortlines await the outcome of the CTA review, it's obvious why Hemmes is watching the deal between CN and AGT's Mobil Grain. "Shortlines might be able to strengthen their position. We'll follow this story and see how successful it is."

If change is a constant, the ability to keep up with it might be the key to success for Canada's shortline railways. Looking to Saskatchewan's example in general and Great Western Railway in particular, it seems adaptation to market demands, leveraging economic and environmental contributions, and pursuing positive relationships with the powers at CN and CP might make the difference for the future of shortlines and their ability to provide the kind of local, specialized service at which they excel. **CG**

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THAT LITTLE BLUE ELEVATOR

It's an unlikely scenario that three friends from Toronto with no agricultural background would find themselves on the wide open prairie buying and exporting lentils, peas and beans. But much has changed in the grain marketing world.

Noor Faridi, Faisal Usmani and Aftab Ghouri might just be the face of that change. Their new company, Superior Pulses, is taking advantage of rapidly increasing pulse acres in southern Saskatchewan, and with the local shortline railway eager to increase volumes, it might be a match made in heaven.

Heaven, in this case, is Verwood, a picturesque little community of about 14 souls some 20 minutes east of Assiniboia. Centred in the midst of wheat, canola and lentil crops, and backdropped by the hills of the Big Muddy Valley, Verwood was chosen by the trio of entrepreneurs who bought the elevator and producer car-loading facility for their startup pulse processing company.

Driving in, one easily gets a sense of how tenuous life is for the shortline railway company and anyone hoping to build on it. There's little here to distinguish Verwood from the next place destined for extinction except for the old elevator painted blue and the Great Western Railway locomotive chugging its way toward it.

President Faridi, and directors Usmani and Ghouri have backgrounds and education in tech and business and began their exporting experience in the manufacturing and trade of textiles to European markets.

About seven years ago, the childhood friends met over their regular evening coffee and decided to venture into agricultural products, establishing Global Commodities Traders Inc.

"We started out with four or five containers a month and were like, 'wow a hundred tonnes,'" laughs Faridi. Now the company exports chickpeas, lentils, beans and a variety of other pulses and products to countries around the world.

As their customer base expanded, GCT began looking for ways to ensure the volumes and quality they needed. "We were dependent on others and were having some quality control issues," says Usmani. Knowing it would be impossible to find or afford anything on the main rail lines, they looked at several shortline locations, eventually choosing Verwood.

"We'd been sourcing from this area for quite a lot of our product," says Faridi. "This area has 20 per cent of Canada's green lentils and chickpeas."

"It's perfect because it's in the middle of the action," adds Usmani. "The market is not saturated because the mainline companies around us don't handle pulses."

Superior Pulses also handles yellow and field peas and draws from an area of 200 or 300 kms, including into the U.S.

Faridi believes their competitive edge comes from being small. "We can match price and handle more products. We are more flexible and can help to solve problems and address individual farmer needs," he says, surveying the site from the Atco trailer they've set up as an office.

"Things are more transparent with smaller companies," Faridi says. "For example, our grading is all done by a third party. It's human nature to benefit yourself, so we take that out of the picture with third-party grading. And we have unique price structures. I think the farmers are quite happy with how we do business."

With a goal to run at capacity of 50 to 60,000 tonnes, Superior Pulses shipped 105 cars in less than two months this fall.

For a community facing extinction, their enthusiasm must be welcome. Working with SaskPower and the RM of Excel, they've brought 3-phase power to Verwood and are in talks with SaskTel to provide high-speed Internet to the area. Superior Pulses employs three full- and two part-time workers, all local. And work has begun on a cleaning plant with expected completion next crop year.

"Cleaning is still an area where we are dependent on others," says Usmani. "We want to avoid dockage and quality problems and this way we will have greater control over the product from field to port."

The rail companies have been very helpful, he says. Superior Pulses relies on three rail companies to get its product to market. Red Coat Road and Rail owns the line through Verwood and they contract Great Western Railway to haul cars to the interchange in Assiniboia where they are picked up by CP.

"It gave RCRR another life because they needed volume on this line. And for CP, their oil shipments are down so this is a way for them to keep their haulage up," says Usmani. "We can't say enough about their help. We're making this huge investment and without cars we die."

They try to sell most of their product to Canadian markets, but also export to countries around the world. Usmani says that while port congestion at harvest is normal, Superior Pulses has good port access through the existing relationships of Global Commodities Trading. "It can be hard to get a foot in the door. The port companies want to secure themselves and want to ship year-round but that's not how agricultural products work. We've had some delays but we mitigate them as best we can."

Faridi adds, "It's all about how you solve the problem. If you're part of the solution they are willing to help."

Superior Pulses is a new company, with experienced owners willing to work with the local community and the shortlines in a mutually beneficial way. A perfect match? Their mutual dependency and respect might just ensure it is.

SEED TREATMENT GUIDE

2017 EDITION

WHEAT

OATS

CANOLA

BARLEY

RYE

SOYBEANS

CORN

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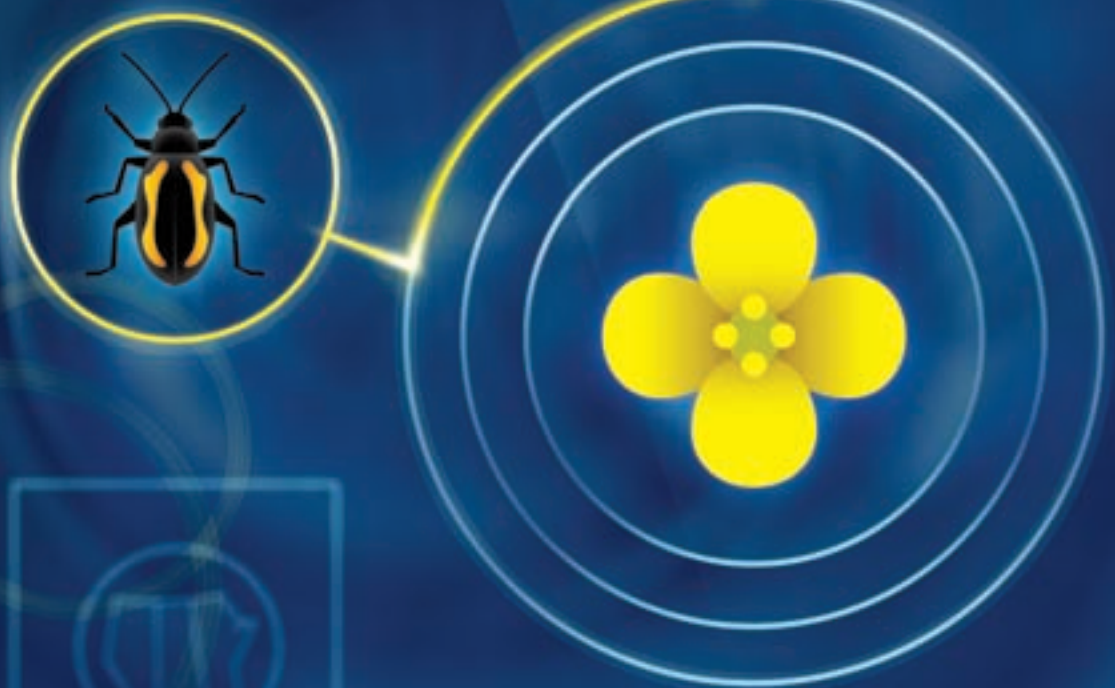

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INTRODUCTION

Many options are available to control pests and diseases. This comprehensive guide of seed treatments can help you make the right choices

By Johanne van Rossum, agronomist

The first step in a sound pest control program is choosing the right cultivar and genetic characteristics. Seed treatments are also important to protect the seed after planting.

This document presents the different seed treatments available for controlling diseases and insect pests. In the table for corn, we have included a list of the genetic traits that can help protect the plant against insects.

To reduce both environmental impacts and the risk of pests becoming resistant to a pesticide, it is essential to know the target pest or organism. Several approaches are often necessary to achieve these goals and ensure optimal yield.

For each of the major field crops listed, we describe the corresponding seed treatments according to their active ingredients and activity against one or more of the main diseases and insects.

This table is for guidance only. Always refer to the label to find the correct field application rate and to know what restrictions must be respected.

There are many possible combinations of seed treatment products, particularly between fungicides and insecticides. Some of these are already premixed by the manufacturer. Many others have not been described in this guide.

Consult your provincial guide to crop protection for direction for safe and effective use of all products.

Please note that most of these seed treatments are only available in a seed treatment facility. Hence, it is important to check with your seed dealers to determine which formulations they use.

To protect insect pollinators, it is vital to take precautions when using seed treatments. For more information on best management practices for protecting pollinators, visit the CropLife website at **www.croplife.ca.**

WHEAT

		INSECT PESTS		SEED-BORNE DISEASES				SOIL-BORNE DISEASES						EARLY-SEASON DISEASES	
COMMERCIAL NAME	ACTIVE INGREDIENT	European chafer	Wireworm	Loose smut	Septoria	Fusarium	Dwarf bunt	Dwarf bunt	Common bunt	Common root rot	Take-all	Seedling blight (Pythium)	Fusarium	Powdery mildew	Septoria leaf blotch
Allegiance FL	metalaxyl	-	-	-	-	-	-	-	-	-	-	+	-	-	-
Apron XL LS	metalaxyl-M	-	-	-	-	-	-	-	-	-	-	+	-	-	-
Belmont	metalaxyl	-	-	-	-	-	-	-	-	-	-	+	-	-	-
Charter RTU	triticonazole	-	-	+	-	+	-	-	+	-	-	-	+	-	-
Cruiser 5 FS	thiamethoxam	+	+	-	-	-	-	-	-	-	-	-	-	-	-
DB-RED L	maneb	-	-	-	-	+	-	-	+	-	-	-	+	-	-
Dividend XL RTA	difenoconazole + metalaxyl-M	-	-	+	+	+	+	+	+	pc	+	+	+	-	+ [1]
Evergol Energy	penflufen + prothioconazole + metalaxyl	-	-	+	-	+	-	-	+	-	-	-	+	-	-
Gemini	triticonazole + thiram	-	-	+	-	+	-	-	+	-	-	+	+	-	-
Insure Cereal	pyraclostrobin + triticonazole + metalaxyl	-	-	+	-	+	-	-	+	+	-	+	+	-	-
Intego Solo	ethaboxam	-	-	-	-	-	-	-	-	-	-	+	-	-	-
IPCO Vitaflo SP	carbathiin + thiram	-	-	+	+	+	-	+	-	s	-	+	+	-	-
Maxim 480FS, Proseed	fludioxonil	-	-	-	-	+	-	-	-	-	-	-	+	-	-
Nipsit SUITE Cereals	clothianidin + metalaxyl + metconazole	-	s	+	-	+	-	-	+	+	-	+	+	-	-
Nipsit Inside	clothianidin (insecticide only)	-	+	-	-	-	-	-	-	-	-	-	-	-	-
Rancona Pinnacle	ipconazole + metalaxyl	-	-	+	-	+	-	-	+	pc	-	+	+	-	-
Raxil PRO	tebuconazole + metalaxyl + prothioconazole	-	-	+	+	+	-	-	+	pc	-	+	+	-	-
Raxil PRO Shield GO-PACK	imidacloprid + tebuconazole + metalaxyl + prothioconazole	-	+	+	+	+	-	-	+	pc	-	+	+	-	-
Stress Shield for cereals, Alias	imidacloprid	-	+	-	-	-	-	-	-	-	-	-	-	-	-
Vibrance Quattro	difenoconazole + metalaxyl-M + sedaxane + fludioxonil	-	-	+	+	+	+	+	+	pc	pc	+	+	-	-
Vitaflo 280	carbathiin + thiram	-	-	+	+	+	+	-	+	pc	-	+	+	-	-

OATS

COMMERCIAL NAME	ACTIVE INGREDIENT	INSECT PESTS	DISEASES				
		Wireworm	Seedling blight	Covered smut	Loose smut	Seedling blight (Pythium)	Root rot
Allegiance FL	metalaxyl	-	pc	-	-	+	pc
Apron XL LS	metalaxyl-M	-	pc	-	-	+	pc
Belmont	metalaxyl	-	+	-	-	+	-
Charter RTU	triticonazole	-	+	+	+	-	-
Cruiser Vibrance Quattro	thiamethoxam + difenoconazole + sedaxane + metalaxyl-M + fludioxonil	-	+	+	+	+	-
DB-RED L	maneb	-	+	+	-	-	-
Dividend XL RTA	difenoconazole + metalaxyl-M	-	+	+	+	+	pc
Evergol Energy	penflufen + prothioconazole + metalaxyl	-	+	+	+	+	-
Gemini	triticonazole + thiram	-	-	+	+	-	-
Intego Solo	ethaboxam	-	-	-	-	+	-
Insure Cereal	pyraclostrobin + triticonazole + metalaxyl	-	+	+	+	+	+
IPCO Vitaflo SP	carbathiin + thiram	-	+	+	+	+	s
Maxim 480 FS, Proseed	fludioxonil	-	pc	-	-	-	pc
Rancona Pinnacle	ipconazole + metalaxyl	-	+	+	+	+	pc
Raxil PRO	tebuconazole + metalaxyl + prothioconazole	-	+	+	+	+	pc
Raxil PRO Shield	imidacloprid + tebuconazole + metalaxyl + prothioconazole	+	+	+	+	+	pc
Stress Shield for cereals, Alias	imidacloprid	+	-	-	-	-	-
Vibrance Quattro	difenoconazole + metalaxyl-M + sedaxane + fludioxonil	-	+	+	+	+	pc
Vitaflo 280	carbathiin + thiram	-	+	+	+	+	pc

CANOLA

COMMERCIAL NAME	ACTIVE INGREDIENT	INSECT PESTS	DISEASES					
		Flea beetle	Seed rot and seedling blight (Aspergillus)	Seed rot and seedling blight (Fusarium)	Seed rot and seedling blight (Rhizoctonia)	Seed rot and seedling blight (Alternaria)	Seedling blight (Pythium)	Blackleg
Allegiance FL	metalaxyl	-	-	-	-	-	+	-
Apron XL LS	metalaxyl-M	-	-	-	-	-	+	-
Belmont	metalaxyl	-		-	-	-	+	-
Dynasty 100 FS	azoxystrobin	-	-	-	+	-	-	-
Gaucho 480 L	imidacloprid	+	-	-	-	-	-	-
Gaucho CS FL	imidacloprid + carbathiin + thiram	+	-	-	+	+	+	+
Helix Vibrance Co-Pack	thiamethoxam + metalaxyl-M + fludioxonil + difenoconazole + sedaxane	+	-	+	+	+	+	+
Intego Solo	ethaboxam	-	-	-	-	-	+	-
Integral	Bacillus subtilis, a natural bacterium	-	-	pc	pc	-	-	-
Lumiderm	cyantraniliprole	+	-	-	-	-	-	-
Maxim 480 FS	fludioxonil	-	+	+	+	-	-	-
Nipsit SUITE Canola	clothianidin + metalaxyl + metconazole	+	-	+	+	-	+	+
Nipsit Inside	clothianidin (insecticide only)	+	-	-	-	-	-	-
Nisso Foundation Lite	iprodione + thiram	-	-	-	+	+	-	+
Poncho 600 FS	clothianidin	+	-	-	-	-	-	-
Prosper Evergol	clothianidin + penflufen + metalaxyl + trifloxystrobin	+	-	+	+	+	+	+
Vault	acetamiprid	+	-	-	-	-	-	-
Visivio Co-Pack	sulfoxaflor + thiamethoxam + difenoconazole + metalaxyl-M + fludioxonil + sedaxane	+	-	+	+	+	+	+

LEGEND +: recommended pc: partial control -: not recommended s: suppression

NOTE 1: Winter wheat only.

Protecting Pollinators on the Farm

Bees are vitally important to the sustainability of agriculture. At least one third of the human food supply from crops and plants depends on insect pollination, most of which is performed by bees. The estimated value of their contribution to Canadian agriculture alone is as much as $2 billion.

Farmers are well known to be excellent stewards of the land. Following Best Management Practices will help maximize the benefits of seed treatments while also protecting bees around farm operations.

As always, when handling any crop protection product, it is important to start by reading and following all label directions.

Best Management Practices* (BMPs) are approaches based on known science that, when followed, support healthy crops, healthy bees and a healthy environment.

* BMPs developed in conjunction with CropLife Canada and its member companies.

Best Management Practices

Prior to planting

- Learn about bees that may forage on your land. Know how to contact neighbouring beekeepers.
- Talk to neighbouring beekeepers about protecting bees during planting; discuss alternative locations for hives or ways to shield bees during planting.
- Store treated seed under appropriate conditions, protected from the elements and pests.
- Wear appropriate personal protective equipment (PPE) when handling treated seed.
- Do not reuse empty seed bags for any purpose other than storing the original treated seed.
- Always clean and maintain planting equipment.
- Always use high-quality seed that is free of excessive dust.
- Do not load or clean planting equipment near bee colonies and avoid places where bees may be foraging, such as flowering crops or weeds.
- Check that the planter is set up correctly and calibrated for correct depth and seed placement.
- When turning on the planter, avoid engaging the system where emitted dust may come in contact with honey bee colonies and foraging bees.
- Manage dandelions and other flowering weeds in the field prior to planting to reduce exposure of bees to seed dust.

During planting

- Avoid transfer of dust from the seed bag into the planter.
- Manage lubricants: Lubricants ease seed singulation, improve drop and reduce wear and tear on equipment and seed. A dust-reducing fluency agent is the only seed lubricant permitted for use when planting corn and soybean seed with a pneumatic (vacuum) meter planter.**

** One hundred percent graphite may continue to be used as a mechanical lubricant in finger pickup or mechanical planter meters only. Graphite must not be used in pneumatic (vacuum meter) planters when the corn or soybean seed has been treated with an insecticide.

- Depending on the type of planter, deflectors may be an option to reduce the off-field movement of seed dust generated during planting. Speak with your equipment dealer or manufacturer regarding the availability of deflector kits for your planter.
- Plant at the recommended seeding rate.
- Check headlands, rough areas and the main body of the field for exposed seed. Spilled or exposed seeds and dust must be incorporated into the soil or cleaned up from the soil surface.
- Be aware of wind direction when planting near a source of pollen or nectar for bees (i.e. nearby flowering crops or weeds).

After planting

- Vacuum treated seed from the seed box and return it to the bag from which it came.
- Collect empty seed bags and lubricant packaging and dispose of them according to provincial regulations.
- Do not leave empty bags or left over treated seed in fields.

For more information about these Best Management Practices and bee health, visit www.beehealth.ca

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CORN

COMMERCIAL NAME	ACTIVE INGREDIENT	INSECT PESTS						DISEASES				
		Corn rootworm	European chafer	Wireworm	Seedcorn maggot	Black cutworm	Corn flea beetle	Seedling blight (Fusarium)	Seedling blight (Rhizoctonia)	Seedling blight (Pythium)	Aspergillus	Penicillium
Acceleron for corn	clothianidin (0.250 mg a.i./seed)+ ipconazole + trifloxystrobin + metalaxyl	-	+	+	+	+	+	+	+	+	+	+
Acceleron for corn without insecticide	ipconazole + trifloxystrobin + metalaxyl	-	-	-	-	-	-	+	+	+	+	+
Allegiance FL	metalaxyl	-	-	-	-	-	-	-	-	+	-	-
Apron XL LS	metalaxyl-M	-	-	-	-	-	-	-	-	+	-	-
Belmont	metalaxyl	-	-	-	-	-	-	-	-	+	-	-
Cruiser 5 FS	thiamethoxam (0.125-0.250 mg a.i./seed)	-	+	+	+	-	+	-	-	-	-	-
Cruiser 5 FS	thiamethoxam (1.250 mg a.i./seed)	+	+	+	+	-	+	-	-	-	-	-
Dividend XL RTA	difenoconazole + metalaxyl-M	-	-	-	-	-	-	+	-	+	-	-
Dynasty 100 FS	azoxystrobin	-	-	-	-	-	-	-	+	+	-	-
Fortenza	cyantraniliprole	-	+	+	-	+	-	-	-	-	-	-
Gaucho 480 L	imidacloprid	-	-	+	-	-	+	-	-	-	-	-
Intego Solo	ethaboxam	-	-	-	-	-	-	-	-	+	-	-
Maxim 480 FS	fludioxonil	-	-	-	-	-	-	+	+	-	+	+
Maxim Quattro	azoxystrobin + fludioxonil + metalaxyl-M + thiabendazole	-	-	-	-	-	-	+	+	+	+	+
Nipsit Inside	clothianidin (insecticide only)	+	+	+	+	+	+	-	-	-	-	-
Poncho 600 FS (250)	clothianidin (0.25 mg a.i./seed)	-	+	+	+	+	+	-	-	-	-	-
Poncho 600 FS (1250)	clothianidin (1.25 mg a.i./seed)	+	+	+	+	+	+	-	-	-	-	-
Proseed	fludioxonil	-	-	-	-	-	-	+	+	-	-	-
Vitaflo 280	carbathiin + thiram	-	-	-	-	-	-	+	+	-	-	-

BARLEY

COMMERCIAL NAME	ACTIVE INGREDIENT	INSECT PESTS		DISEASES				
		European chafer	Wireworm	Seed rot and seedling blight	Covered smut	Loose smut	False loose smut	Root rot
Allegiance FL	metalaxyl	-	-	pc	-	-	-	pc
Belmont	metalaxyl	-	-	+	-	-	-	-
Charter RTU	triticonazole	-	-	+	+	+	+	-
Cruiser 5FS	thiamethoxam	+	+	-	-	-	-	-
Cruiser Vibrance Quattro	thiamethoxam + difenoconazole + sedaxane, metalaxyl-M + fludioxonil	+	+	+	+	+	+	+
DB-RED L	maneb	-	-	+	+	-	+	-
Dividend XL RTA	difenoconazole + metalaxyl-M	-	-	+	+	-	+	pc
Evergol Energy	penflufen + prothioconazole + metalaxyl	-	-	+	+	+	+	-
Gemini	triticonazole + thiram	-	-	+	+	+	+	-
Insure Cereal	pyraclostrobin + triticonazole + metalaxyl	-	-	+	+	+	+	+
Intego Solo	ethaboxam	-	-	+	-	-	-	-
IPCO Vitaflo SP	carbathiin + thiram	-	-	+	-	+	+	S
Maxim 480 FS, Proseed	fludioxonil	-	-	+	-	-	-	pc
Rancona Pinnacle	ipconazole + metalaxyl	-	-	+	+	+	+	pc
Raxil PRO	tebuconazole + metalaxyl + prothioconazole	-	-	+	+	+	+	+
Raxil PRO Shield	imidacloprid + tebuconazole + metalaxyl + prothioconazole	-	+	+	+	+	+	+
Stress Shield for cereals, Alias	imidacloprid	+	+	-	-	-	-	-
Vibrance Quattro	difenoconazole + metalaxyl-M + sedaxane + fludioxonil	-	-	+	+	+	+	+
Vitaflo 280	carbathiine + thiram	-	-	+	+	+	+	pc

SOYBEANS

			INSECT PESTS				DISEASES				
COMMERCIAL NAME	ACTIVE INGREDIENT	Soybean nematode cyst	Seedcorn maggot	Soybean aphid	Bean leaf beetle	Wireworm	Phytophthora rot	Phomopsis seed decay	Seedling blight (Fusarium)	Seedling blight (Rhizoctonia)	Seedling blight (Pythium)
Acceleron for soybean with insecticide	imidacloprid + fluxapyroxad + metalaxyl + pyraclostrobin	-	+	+	+	+	+	+	+	+	+
Acceleron for soybean with fungicide	fluxapyroxad + metalaxyl + pyraclostrobin	-	-	-	-	-	+	+	+	+	+
Allegiance FL	metalaxyl	-	-	-	-	-	+	-	-	-	+
Apron Maxx RTA	metalaxyl-M + fludioxonil	-	-	-	-	-	+	-	+	-	+
Apron XL LS	metalaxyl-M	-	-	-	-	-	+	-	-	-	+
Belmont	metalaxyl	-	-	-	-	-	+	-	-	-	+
Clariva pn	pasteuria nishizawae	+	-	-	-	-	-	-	-	-	-
Cruiser 5FS	thiamethoxam	-	-	-	+	+	-	-	-	-	-
Cruiser Maxx Vibrance Bean	thiamethoxam + metalaxyl-M + fludioxonil + sedaxane	-	+	+	+	+	+	+	+	+	+
EverGol Energy	penflufen + metalaxyl + prothioconazole	-	-	-	-	-	+	+	+	+	+
ILeVO	fluopyram	s	-	-	-	-	-	-	-	-	-
Intego Solo	ethaboxam	-	-	-	-	-	+	-	-	-	
IPCO Vitaflo SP	carbathiin + thiram	-	-	-	-	-	-	+	+	+	-
Maxim 480 FS	fludioxonil	-	-	-	-	-	-	+	+	+	-
Stress Shield for cereals and soybean, Alias	imidacloprid	-	+	+	+	+	-	-	-	-	-
Trilex AL	trifloxystrobin + metalaxyl	-	-	-	-	-	-	+	-	-	-
Vibrance Maxx Co-Pack	sedaxane + fludioxonil + metalaxyl-M	-	-	-	-	-	+	+	+	-	+
Vibrance Maxx RFC	metalaxyl-M+ fludioxonil+ sedaxane	-	-	-	-	-	+	+	+	+	+
Vitaflo 280	carbathiin + thiram	-	-	-	-	-	-	+	+	+	-

RYE

		INSECT PESTS	DISEASES					
COMMERCIAL NAME	ACTIVE INGREDIENT	Wireworm	Seedling blight	Seed-borne Septoria	Common bunt	Dwarf bunt	Seedling blight (Pythium)	Root rot
Allegiance FL	metalaxyl	-	pc	-	-	-	+	pc
Apron XL LS	metalaxyl-M	-	pc	-	-	-	+	pc
Belmont	metalaxyl	-	+	-	-	-	-	-
Cruiser Vibrance Quattro	thiamethoxam + difenoconazole + sedaxane + metalaxyl-M + fludioxonil	+	+	-	+	+	+	+
DB-RED L	maneb	-	+	-	+	-	-	-
Dividend XL RTA	difenoconazole + metalaxyl-M	-	+	+	+	+	+	pc
Evergol Energy	penflufen + prothioconazole + metalaxyl	-	+	-	-	-	+	-
Insure Cereal	pyraclostrobin + triticonazole + metalaxyl	-	+	-	+	-	+	+
Intego Solo	ethaboxam	-	-	-	-	-	+	-
IPCO Vitaflo SP	carbathiin + thiram	-	+	-	-	-	+	s
Maxim 480 FS, Proseed	fludioxonil	-	+	-	-	-	-	pc
Rancona Pinnacle	ipconazole + metalaxyl	-	+	-	-	-	+	pc
Vibrance Quattro	difenoconazole + metalaxyl-M + sedaxane + fludioxonil	-	+	+	+	+	+	+
Vitaflo 280	carbathiin + thiram	-	+	-	-	-	+	pc

LEGEND +: recommended pc: partial control -: not recommended s: suppression

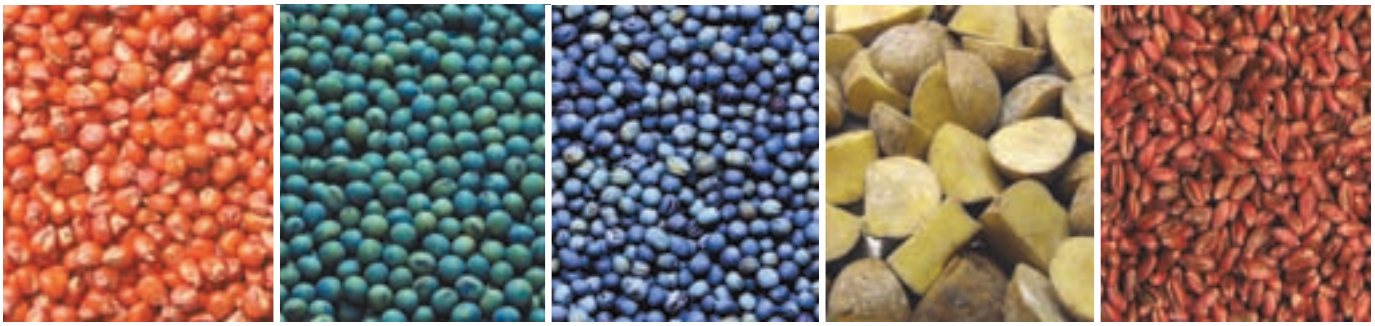
CORN

Genetic traits against insects added through genetic engineering COMMERCIAL NAME	INSECT PESTS								
	Corn rootworm	European chafer	Wireworm	Seedcorn maggot	Black cutworm	European corn borer	Western bean cutworm	Corn earworm	Fall armyworm
Agrisure CB/LL	-	-	-	-	-	+	-	-	-
Agrisure GT/CB/LL	-	-	-	-	-	+	-	-	-
Agrisure 3000 GT	+	-	-	-	-	+	-	-	-
Agrisure Viptera 3110	-	-	-	-	+	+	+	+	+
Agrisure Viptera 3111	+	-	-	-	+	+	+	+	+
Agrisure 3120	-	-	-	-	+	+	+	-	+
Agrisure 3122	+	-	-	-	+	+	+	-	+
Agrisure Viptera 3220	-	-	-	-	+	+	+	+	+
Genuity Smartstax (Monsanto) / Smartstax (Dow)	+	-	-	-	+	+	+	+	+
Genuity VT Double Pro	-	-	-	-	-	+	-	+	+
Genuity VT Triple Pro	+	-	-	-	-	+	-	+	+
Herculex 1 and Herculex 1/ RR2	-	-	-	-	+	+	+	-	+
Herculex XTRA and Herculex XTRA/RR2	+	-	-	-	+	+	+	-	+
Optimum AcreMax / Optimum Intrasect	-	-	-	-	+	+	+	-	+
Optimum AcreMax Xtreme	+	-	-	-	+	+	+	-	+
Optimum AcreMax Xtra/ Optimum Intrasect Xtra	+	-	-	-	+	+	+	-	+

LEGEND +: recommended pc: partial control -: not recommended s: suppression

The Value of Seed Applied Insecticides: Advanced Seed Protection Technology

Seed Applied Insecticides (SAIs) are one of the most advanced forms of crop protection technology, offering growers a targeted, environmentally sustainable means of pest management. SAI technology protects seeds and emerging plants from insect damage during the critical first weeks of development.



Seed Applied Insecticides enhance crop quality and yield

SAIs protect the seed and seedlings from pests, ensuring that the plants get off to a healthy, vigorous start, which ultimately translates into quality and yield improvements. This protection is key to agricultural production in Canada, as damaging insect pests have been documented in all growing regions of the country for each major agricultural crop.

SAI protection is particularly important in instances where there is no curative option for salvaging plant health after insect damage has occurred.

Seed Applied Insecticides offer numerous environmental advantages

These benefits include:

- A significantly lower amount of active ingredient per acre compared to foliar and soil-applied pesticides
- Direct application to the seed, which minimizes off-target drift
- Reduced impact on non-target organisms, including beneficial insects
- Protection from increased pest pressure associated with a range of agronomic practices including reduced/no-till field conditions

Seed Applied Insecticides also deliver agronomic and production benefits

The value of SAIs extends beyond pest control by:

- Optimizing seeding rates due to improved plant stand
- Minimizing the need for replants
- Extending the application window for in-season, foliar pesticide applications (when needed)
- Supporting earlier planting practices, which helps to maximize labour and production efficiency
- Complementing trait technology to manage insect pests (where there are no traits available to control insect pests and/or to provide a different mode of action for resistance management)

Seed Applied Insecticides deliver benefits even in situations of low-to-moderate insect pressure

Insect pests can cause damage to crop growth, quality and yield, even at low-to-moderate pressures. Small populations of certain pests may have a detrimental effect, with the result that the seedling may never emerge or the health of the plant may be compromised. If untreated seed is put into the ground where pests exist, there is no way to protect the seed retroactively. In either of these scenarios, the crop may have to be replanted at significant cost.

In addition to insect control, SAIs also provide strong plant establishment, health and vigour by protecting and strengthening the plant at crucial times of development (i.e. germination and root growth). This allows plants to better compete with weeds and diseases and deal with abiotic stresses such as cool soil temperatures or dry conditions at planting.

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CROPS GUIDE

This pea field near Three Hills, Alta., was devastated by root rot in 2014.

PHOTO: JENNIFER BLAIR

Managing root rot in pulses

Peas and lentils have been a financial and rotational blessing for producers, but aphanomyces in partnership with fusarium is raining on their parade

BY LISA GUENTHER / CG FIELD EDITOR

If you'd mentioned aphanomyces at a farm show five years ago, you would have drawn quite a few blank looks. But these days speakers with aphanomyces expertise fill the seats.

The reason is no mystery to Prairie pulse producers. Field surveys have found aphanomyces from Alberta to Manitoba, as far south as the U.S. border and as far north as the Peace, as Syama Chatterton told farmers at CropSphere in Saskatoon this January.

That widespread distribution means that although aphanomyces wasn't identified in Western Canada until 2012, it's "actually been here for a number of years," said Chatterton, an Agriculture and Agri-Food Canada researcher specializing in plant disease.

It was just that susceptible crops escaped severe infections until pulse production hit a critical point, she added. In 2012 Saskatchewan fields also saw a lot of moisture, which may have been part of the reason aphanomyces made its presence known.

THE KEY QUESTION FOR GROWERS

Part of the reason aphanomyces, a water mould, escaped detection is that it rarely travels alone. When it infects a pea or lentil root, other root rot pathogens, notably fusarium, are likely to follow. (Chatterton pointed out fusarium strains avenaceum and solani cause these root rots, not graminearum, the cause of head blight).

In samples tested using conventional methods, fusarium also tends to obscure the aphanomyces. Now labs use DNA tests to detect or rule out aphanomyces.

But do farmers even need to test for aphanomyces, or can they manage root rot without knowing which pathogens are causing the problem?

Probably not very well, unfortunately. Knowing which root rot pathogens are afflicting crops is important for any farmers who want to keep pulses in their rotations. Although lentils and peas are susceptible to

CONTINUED ON PAGE 36

aphanomyces, chickpeas, soybeans, and fababeans are much more resistant.

But lentil growers considering switching some acres to chickpeas need to know if fusarium is part of the root rot problem, Saskatchewan farmer Derek Tallon said at CropSphere. "Because if it's a fusarium, you might not be gaining a whole bunch moving to a chickpea."

Chickpeas aren't the only crop susceptible to fusarium root rot. Field surveys done in Manitoba and Alberta found Fusarium avenaceum in fababeans, according to a report on the Manitoba Pulse and Soybean Grower website. Alberta Agriculture also notes that both fusarium and rhizoctonia are sometimes found in fababeans.

CHOOSING SEED TREATMENTS

Knowing which pathogens are rotting roots also helps farmers choose seed treatments. Intego Solo, a seed treatment containing ethaboxam, is now registered to suppress aphanomyces root rot early in the season. Chatterton said that it must be used with other seed treatments.

Intego Solo effectively suppressed aphanomyces in peas during greenhouse studies, she said. Researchers also tried it in the field on peas, and found it was effective when combined with Apron early in the season. In fact, that combination worked better than the check, Apron alone, or any of the other treatments in the study.

But while fusarium tends to infect roots at the seedling stage, aphanomyces can hammer roots at any time in the growing season. Researchers measured disease severity three times: early in the season, during flowering, and during pod fill. During flowering and pod fill, there was little difference between any of the treatments, Chatterton said. But she noted they hadn't yet finished crunching numbers to see if the seed treatments affected yield.

MORE RESEARCH IN THE PIPELINE

Chatterton said her Lethbridge lab has become "exponentially busier" since aphanomyces was first found in Saskatchewan in 2012.

"Because it's such a recent detection for Canada, there's really been no research done in our prairie soils," she said.

The pulse industry has responded by ramping up research. Sherrilyn Phelps, agronomy manager for Sask Pulse Growers, said that researchers from across the Prairies are studying the disease. Sask Pulse alone has invested $2.7 million to date on root rot research, on everything from developing resistant varieties to field surveys, she added.

Some of the research focuses on field-based solutions, such as the seed treatments. Another potential solution is Phostrol, a fungicide used in the U.S. to control water moulds. It's not registered for pulses, Chatterton noted, but results south of the border are promising. Producers would likely apply it four to six weeks after seeding, if it's registered one day. However, it won't protect the crop all summer, so a rainy July would still be bad news for pea and lentil growers.

Researchers are also trying soil amendments. If they work, they'll have long-term control benefits, Chatterton said.

"Calcium is the one important factor that has been found to prevent zoospores from germinating," Chatterton said. She acknowledged adding calcium might prove to be impractical for farmers, but researchers want to see if it's effective.

They're also looking at brassica cover crops. Greenhouse studies show that as the

Managing in the meantime

Some considerations for controlling root rot in peas and lentils

There are still several questions around how best to manage aphanomyces. But Syama Chatterton of Agriculture and Agri-Food Canada offers some tips:

- Crops suffering from root rot should be tested for aphanomyces. Its presence or absence will dictate how farmers manage root rot.
- If a field has aphanomyces, farmers should avoid planting peas or lentils for six to eight years. That longer rotation will drop inoculum levels.
- Farmers should consider seed treatments that target the root rot pathogens found in their fields.
- Sometimes aphanomyces is spread uniformly through the field, while other times it's patchy. Using a drone to snap photos of the pea or lentil crop can help farmers and agronomists figure out from where to pull samples.
- In-crop fungicide applications have no effect on root rots.

Risk factors

Chatterton adds that these risk factors may influence deciding in which fields to seed to lentils or peas:

- Wet soils favour aphanomyces. The oospores can survive and germinate in dry soil. But it's the mobile zoospores that infect roots, and they need moisture.
- Aphanomyces also loves compacted soils. Keep in mind that soils with high clay content have a higher risk of compaction.
- Researchers think that four to five cropping cycles with a susceptible crop might bump a field to the threshold level. That's because every time a pea or lentil crop is planted, aphanomyces inoculum builds. The oospores can survive in soil for years, so even a four- or five-year rotation builds inoculum.
- Other root rots, especially fusarium, make plants more vulnerable to aphanomyces. Pythium is also a problem.
- Acidic soils and warmer soils (24 C) are also a little more vulnerable to aphanomyces, although Chatterton says these factors are less important than the others. But aphanomyces' love of warm soils is probably why farmers tend to see the disease in late June and early July.

Researchers, farmers, and agronomists know a lot more about aphanomyces than they did five years ago, yet it's hard to say when the pulse industry will really get a handle on the disease. It's a safe bet that for the next few years, anyone speaking about aphanomyces will have a full house.

When aphanomyces infects a pea or lentil root, other root rot pathogens, notably fusarium, are likely to follow.

green manure breaks down, it creates bio-fumigants in the soil, Chatterton explained. Those bio-fumigants suppress the aphanomyces oospores, which are the spores that can lie dormant in the soil for years. Trials funded by Sask Pulse will get underway in 2017 to determine whether brassica covers will be effective in the field and how feasible the idea is in Western Canada.

SOIL ZONE EFFECTS

While lab tests can now tell farmers whether they have aphanomyces in a field, the tests don't tell farmers how severe the infestation is. That makes it difficult to know the risks of seeding a susceptible crop in that field.

However, researchers have been studying how many spores are needed to cause disease. They're also looking at whether that number varies between soil zones, and whether other soil-borne pathogens influence the disease severity.

They've found that dark brown soil zones are most conducive to aphanomyces disease development, probably because of the high clay content, Chatterton said. Dark brown soils only need 100 oospores per gram of soil, compared to 750 spores per gram in the brown and black soils.

But once you add fusarium to the brown or black soils, that disease threshold drops to about 100 aphanomyces spores per gram, she added.

Researchers also assessed root rot disease severity in lentils and peas by soil zone. Peas suffered the most severe root rot in the brown soil. They looked best in the grey soil zone (although Chatterton cautioned they had a small sample size in that zone), followed by the dark brown.

Lentils in the black soil zone were hit hardest by root rot, while those in the brown soil zone fared the best.

Sabine Banniza, a University of Saskatchewan researcher, looked at how aphanomyces is distributed through the soil profile. Banniza pulled samples from the dark brown, brown, and black soil zones at different depths.

Banniza's project found the highest levels of aphanomyces inoculum in the top 20 cm of soil. But researchers also found aphanomyces in the 40- to 60-cm samples. That's another indication that aphanomyces has been around for a while, Chatterton said. **CG**

Infections of peas versus lentils:

Pea fields surveyed were either not infected or fully infected, with little in between

Sherrilyn Phelps' first day with Sask Pulse was July 7, 2014. By 8 a.m. that morning, she'd already fielded her first call on root rot. It was a sign of things to come.

Lentils and peas are both very susceptible to aphanomyces, Phelps told CropSphere delegates in Saskatoon this winter. Some other pulses, such as chickpeas, soybeans, and fababeans, are much more resistant to the pathogen.

But recent research shows that aphanomyces infestations seem to progress differently in pea and lentil fields. Soil zones also seem to affect infestations.

AAFC's Syama Chatterton presented findings from field surveys done across the soil zones. Researchers pulled several samples from each pea and lentil field, then tracked how many samples tested positive for aphanomyces, and how many were negative. Each sample was tested twice, which led to a bit of conflict in the numbers, but there were some trends.

Researchers found a mixture of lentil fields moving from a healthy to diseased state. Over 20 lentil fields had no positive samples of aphanomyces. About 25 had moderate infections, and over 20 fields had between 76 and 100 positive samples.

Peas were a different story. At least 35 fields had no aphanomyces-positive samples, and about 24 had 76 to 100 positive samples. There were few fields in between with moderate infestations. "You have the healthy fields, and then you have the fields that have a lot of disease," says Chatterton.

Is climate change making leaf diseases worse?

Durum quality took a beating last year, and climate change could see more of the same

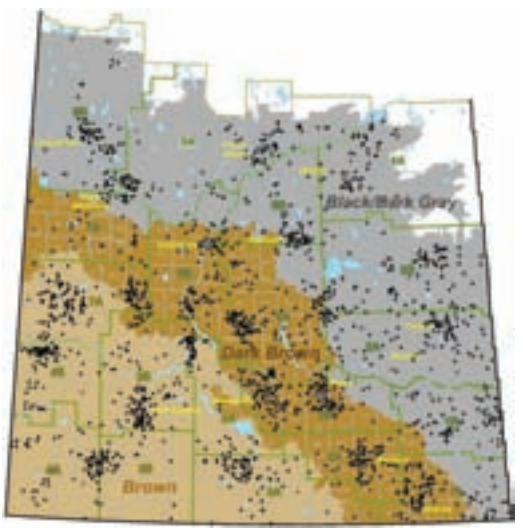
BY JULIENNE ISAACS

It is difficult — even impossible — to define the precise relationship between climate change and disease incidence and severity in Western Canada.

But new research from Agriculture and Agri-Food Canada's Swift Current Research and Development Centre is contributing a few pieces to the puzzle.

Research scientist Myriam Fernandez says breeding for resistance to the leaf spot (LS) complex hasn't made the strides seen in fusarium or other wheat disease breeding programs. But LS is the most frequently encountered disease of bread and durum wheat on the Prairies, and can sharply reduce yield and quality under the right conditions.

> **"Use the most resistant cultivar available. Do not practise summer fallow, and diversify crop rotations with non-cereals."**
>
> *Myriam Fernandez, AAFC*



Location of the bread and durum wheat fields surveyed in 20 crop districts across Saskatchewan, from 2001 to 2012.

PHOTO: AAFC

Fernandez is the author of a new long-term study assessing the impacts of climate change as well as regional and agronomic practices on leaf spotting in bread and durum wheat.

"It is expected that seasonal fluctuations in the severity of diseases and prevalent pathogens will continue in Western Canada, with the potential for high levels of diseases such as LS and a corresponding decrease in crop productivity," she writes in the study.

The study looks at data from long-term surveys of wheat and durum acres across Saskatchewan from 2001 to 2012, when the province saw variable weather conditions, including dry years and years with above-average moisture, mostly between 2010 and 2012.

DURUM MORE SUSCEPTIBLE

"Disease severity increased going northward and eastward, so it was favoured in wetter areas. This was mostly associated to the septoria leaf complex, which is favoured by wet conditions," says Fernandez.

The study found that durum is more susceptible to LS than common wheat.

Spot blotch, caused by the pathogen Cochliobolus sativus, showed a marked increase in wetter years, and was most prevalent in durum.

"If wet and warm weather continues, this pathogen could become an important leaf spotting pathogen in Saskatchewan, especially in durum wheat," says Fernandez. The same trends, she notes, have been described in other parts of the world during similar weather conditions. "It's very important to also consider that C. sativus also causes root rot and black point/smudge in cereals."

LINKING CLIMATE AND LEAF DISEASES

Herb Cutforth, an agricultural meteorologist at Swift Current, says climate data in southwest Saskatchewan shows warming over the past 50 years or so, especially between January and April. From May through August minimum temperatures have warmed slightly.

"Yearly precipitation totals haven't changed much, but the number of events with little precipitation have increased," he says.

Brian Amiro, a University of Manitoba soil scientist specializing in agricultural meteorology, says that although descriptions of climate trends tend to be very regional, some general western Canadian trends over the last 60 years have shown an uptick in winter temperatures and less snow; this means some pathogens could more successfully overwinter across the region.

The leaf spot complex (tan spot, septoria leaf blotch complex and spot blotch) is one of the most prevalent and widespread wheat diseases in Western Canada. AAFC says that trials in southern Saskatchewan estimated a 16 per cent reduction of leaf spot disease corresponded to a 17 per cent durum yield increase at Swift Current, while a six per cent leaf spot reduction corresponded to a yield increase of 27 per cent at Indian Head.

PHOTO: SASKATCHEWAN AGRICULTURE

Climate studies, as distinct from weather, look at longer-term patterns, and it is difficult to pick out specific climate-related signals influencing diseases, says Amiro.

Nevertheless, it seems clear climate change will have an impact on Canadian crop production into the future, says Amiro, who was an editor on a 2014 Alberta Institute of Agrologists green paper into the need to adapt production practices in response to likely climate scenarios over the next few decades.

The green paper cites International Panel on Climate Change (IPCC) projections that suggest the prairie region will see a one degree Celsius increase in summer temperatures and a two degree Celsius increase by 2050, as well as the potential for a 10 to 20 per cent increase in precipitation.

BEST MANAGEMENT PRACTICES

The Saskatchewan study showed that for bread wheat, leaf spot severity was greater after a year of summerfallow under reduced tillage than when wheat had been preceded by an oilseed crop under reduced tillage. For durum wheat, LS severity was greatest for reduced tillage systems where there was no previous crop information followed by summerfallow systems. In contrast, durum wheat with a previous oilseed crop had the lowest mean disease severity.

Fernandez says her recommendations for curbing disease pressure have remained the same since the 1990s, and will become even more important if disease pressure increases.

"Use the most resistant cultivar available," she says. "Do not practise summerfallow, and diversify crop rotations with non-cereals, such as pulses, as much as possible, particularly when using zero-till."

"Only use an aerial fungicide if spotting on the upper leaves is significant, and don't apply a fungicide at early crop growth," she adds. "All wheat crops develop leaf spot lesions on the lower leaves which, depending on the environment later on, and the susceptibility of the cultivar, might not progress much further." **CG**

Comfort builds for straight combining canola

New research and grower experiences are answering important questions about straight combining canola in Western Canada. Comfort with the practice rises as more growers explore where and when it might work and how to improve results

BY JAY WHETTER / CANOLA COUNCIL OF CANADA

Dale Beutler of Whitewood, Sask. did not have a good first experience straight combining canola. It was 2015. Like many canola fields in the area that year, the one he left standing for straight combining had been reseeded and was late. By the first week of October, stems were still green — even though seeds were ripe and dry — and harvest was excruciatingly slow.

"It might have been easier if I had waited a week or 10 days, but in October, you never know how many good harvest days you have left," Beutler says.

The crop also had a pretty nasty lean to it, and was wrapping in one direction on his MacDon draper header. So Beutler combined the whole 50-acre field in the same direction. "A larger farmer would not have the patience, tolerance or time for that," he says.

With so many mishaps, Beutler's first crack at straight combining canola provided a lot of useful experience.

More and more canola growers are in the same test mode with straight combining canola, looking for a way to work it into their harvest program. Surveys found that 20 per cent or more of Canadian canola growers straight combined at least some canola in 2016. An increased level of grower experience, new research into headers and pre-harvest dry-down sprays, and new shatter-tolerant varieties are important factors in this shift.

James Humphris is crop manager for Bayer CropScience, a company that brought the shatter-tolerant trait to market. "We are on track with the prediction that 40 to 50 per cent of Canadian canola will be straight cut by 2020," he says.

Beutler seeded a few fields in 2016 with every intention to straight combine them. Building on his 2015 experience, he seeded April 30 at a heavier seeding rate to keep plants small and maturity even and early. "That way, I wasn't going to be stressing the harvest date," he says. "I could give the crop the time it needed to dry down."

Factors that increase the success rate for straight-combined canola, according to *Canola Watch*, are a uniform crop (helped at seeding time by good emergence rates and a decent plant population), a well-knitted crop with a slight lean, minimal weed growth, and low levels of plant disease. Good pod integrity is another factor. If a lot of pods have been damaged by frost, disease, hail or insect damage, the field may not be a good candidate for straight combining. Shatter-tolerant varieties help with pod integrity.

FOUR COMMON QUESTIONS

Chris Holzapfel, research manager at the Indian Head Agricultural Research Foundation (IHARF) in Saskatchewan, has done a few projects on straight combining canola. When talking to growers on this topic, four common questions are:

Q 1. Do I need to use pre-harvest herbicides or desiccants?

An IHARF demonstration in 2016 found no statistical difference in seed yield for treated versus untreated. But Holzapfel reports that treatment did reduce straw moisture and seed moisture, potentially speeding up harvest date and, most importantly, making harvest easier and reducing combining time.

That same year, Lorne Grieger, assistant vice-president with the Prairie Agricultural Machinery Institute (PAMI) location in Portage la Prairie, Man., led a study of pre-harvest aids. The treatments were Reglone, a Heat-glyphosate tank mix, and natural ripening. The variety was Bayer's shatter-tolerant variety L140P.

PAMI compared cost, yield and quality, harvest timing, combine performance and losses for all three treatments and for a swathed check.

Straight combining with a Reglone treatment was $17.17 per acre more than swathing and combining. Heat plus glyphosate was $21.83 more, and natural ripening was $4.87 less. These costs include all machinery, manpower and product costs associated with swathing, spraying and combining.

"When doing their own economic analysis, producers should also consider costs that relate to the ability to schedule and predict harvest timing, ease of harvest, and operator experience," Grieger says.

The PAMI study showed no statistical difference in yield for the four treatments. It was the same for quality:

> **"Producers should also consider the costs that relate to the ability to schedule and predict harvest timing, ease of harvest, and operator experience."**
>
> *Lorne Grieger, PAMI*

green seed was highest for naturally ripened, but it was within No.1 parameters for all treatments,.

Differences were more pronounced with harvest timing and combine efficiency. Reglone-treated plots were ready the same day as swathed treatments. Heat/glyphosate treated plots were harvested three weeks after application, but rain in the interim probably delayed harvest. Naturally ripened plots were ready for combining at the same time as the Heat/glyphosate treatments.

Combines burned more fuel per hour and were under greater load when harvesting straight cut versus swathed crop, but interestingly, the two sprayed trials allowed for more bushels per hour.

"Natural ripening required no swathing or spraying and provided cost savings, but high green matter in the stand made harvest difficult. Low, wet areas with higher weed populations were particularly frustrating for the operator," Grieger says.

As for losses, very little (0.1 bu./ac.) occurred pre-harvest. Losses out the combine were higher for the Heat/glyphosate treatment (2.8 bu./ac.) than for the other three treatments, but Grieger thinks this is likely

CONTINUED ON PAGE 42

due to increased productivity (bu./hr.) of that treatment. For all treatments, losses tended to align with combine productivity.

The PAMI report concluded: "Straight-cut treatments with harvest aids had a higher cost of production, but the benefits of timeliness or ease of harvest may provide sufficient benefit to warrant this cost for certain operations. Similarly, in situations where control of timing is less of a concern, swathing or natural ripening harvest may prove to be the most economical."

Beutler has taken a wait-and-see approach to pre-harvest treatment. He applied pre-harvest glyphosate around the headlands of one field to control kochia, but otherwise he has not used dry-down aids. "When I sprayed headlands, the weeds dried down nicely but I didn't notice a significant difference in canola stalks," he says. He combined about 12 days after spraying.

Beutler does, however, use a second shot of herbicide in the weed management window at the beginning of the season. "The cleaner the field, the better for straight combining," he says.

He would consider a pre-harvest application across the whole field if it had uneven maturity or was weedy or green.

Q 2. Are there any storage issues with straight-combined canola?

Chris Vervaet, executive director with the Canadian Oilseed Processors Association, says a couple of members wonder whether straight-combined canola relates to higher green seeds and storage issues.

"There are some questions around whether the desiccation or dry-down products are being properly applied with regard to timing and leading to higher instances of green seeds and heated canola," he says.

Angela Brackenreed, Canola Council of Canada agronomy specialist, wouldn't directly correlate green seed with the act of straight cutting, but says early application of desiccants could certainly elevate green count.

"Anecdotally, there have been a lot of reports of more heating in canola that was straight cut," she says. "The reasons for this are still unclear, but I don't suspect it is related to green seed counts generally. Green weed seeds and green plant material are more likely, while other factors need further investigation."

Q 3. What is the best header for straight cutting canola?

PAMI just finished a three-year study into headers, comparing harvest losses for rigid auger, draper and extended-knife headers.

"Producers ask if they can straight combine canola with the header they already have, and as a general rule, I would say 'yes,'" says Nathan Gregg, project manager with PAMI. "Based on our experiment, all headers did the job within acceptable limits."

But there is always room for improvement, he adds.

The header with extendable knife (PAMI used New Holland's Varifeed in its study) showed some ability to minimize shatter losses, Gregg reports. He gives three reasons: (1) With the knife in front of the reel, it captured more of the losses from reel impact on dry pods. (2) Thanks to more space on the table for crop material, the header could be optimized for crop size. (3) The feederhouse will spit forward seeds as it grabs the crop. With more room in front of the feederhouse, more of these seeds will stay on the table.

PAMI also compared crop dividers. The Varifeed header had a vertical-knife divider, which had a benefit over rotary-knife and standard fixed dividers, in general. Gregg says this was particularly true when crop was very dry or lodged or both, but the standard divider worked well in moist conditions and slightly greener crop.

Q 4. What is the best variety for straight combining?

Any variety can be straight combined successfully under low-risk conditions, i.e. a well-knitted crop with good pod integrity, low winds and timely harvest.

IHARF compared 12 varieties from all herbicide-tolerance systems from 2011-13. In his report, Holzapfel concluded: "In years where conditions were challenging, such as the severe wind events in 2012 and higher than usual sclerotinia incidence, all of the cultivars were impacted and there were severe losses in all treatments."

Data from harvest-delayed trials in 2011 and 2012 show losses from 3.0 bu./ac. for the best variety and 11.6 bu./ac. for the worst.

The IHARF trial added a shatter-tolerant variety in 2013 and 2014. "While overall losses were much lower in general during this period and all varieties were generally straight combined successfully, losses were consistently lowest with the shatter-tolerant hybrid," Holzapfel says.

The PAMI header trial ran the same treatments for a shatter-tolerant variety and a similar-performing standard variety. "If you're considering straight combining canola, shatter tolerance is a worthy endeavour," Gregg says. "Benefits strictly due to this variety trait had a greater impact on straight combining success than any factor related to header choice or dividers."

BEUTLER'S YIELD

Good decision-making depends on more than just one farmer's results on a couple of fields in one little region. But since this article started with Beutler's difficult first try with straight combining canola, it should end with a little mention of his yields.

In both 2015 and 2016, his straight-combined canola yielded three to four bu./ac. more than the average for his other fields, he says. Buoyed by these results, he will grow only shatter-tolerant varieties in 2017 with the goal of straight combining more acres.

"I'm a small farmer. Machinery cost is a big factor for me," he says. Not having to buy a new swather is a motivator. And in his wide open area, he knows swathed canola has its own risks. "I've seen more canola swaths blow around the countryside than I care to remember," he says.

As Beutler's experience shows, a bad beginning is not a failure, but a chance to learn. With practical new research discoveries adding to these grower experiences, straight combining canola will become an effective and common practice in Western Canada. **CG**

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

The world's most populous country gets serious about farm machinery

BY LILIAN SCHAER

Like so much of China, the country's agriculture is in a state of transition. While some sectors of the industry are barreling full speed into mechanization, with impressive rates of technology adoption to match the latest in global production standards, the road to modernizing agricultural production isn't always a smooth one.

China is the world's second-largest economy and with 1.4 billion inhabitants, it is home to one-fifth of the global population — but the country has only nine per cent of the world's arable land, and seven per cent of its fresh water.

Since the 1980s, the country has been urbanizing with astonishing speed — building up its cities at a rate unrivalled in world history — with 60 per cent of the population expected to live in urban areas by 2020.

By comparison, 60 per cent of the country's population was considered rural only two decades ago.

Canadian farmers have some experience in this too, and they know that one of the impacts of urbanization is to make it much harder to find farm employees.

It's the same in China, where urbanization has led to a mass exodus of workers from the countryside. According to Statista.com, 44.8 per cent of China's population worked in agriculture in 2005. But that dropped to 28.3 per cent by 2015.

Suddenly, agriculture had an amazing opportunity to meet the food demands of a booming middle class, but also the challenge of how to produce that food with a shrinking labour force.

For the Chinese government, the answer to both lies with mechanization and land consolidation. In pursuit of its long-standing target of achieving 95 per cent self-sufficiency in food grains by 2020, this has resulted in the creation of large co-operative-style farms that work their own land allocations, as well as those of their members and of other farmers.

Unlike many Western countries where land ownership lies at the citizen level, it's the state that owns the land in China. Farmers can retain control of their land allocations themselves or they can transfer those rights to a co-operative and become employees of the co-op.

The Beijing Xingnongtianli Agricultural Machinery Co-operative near Beijing, for example, works approximately 2,000 hectares and provides agronomy, equipment repair and cropping services for over 2,000 farms. Farmers who join the co-op receive 1,200 Yuan Renminbi/MU per year (roughly $1,500 per acre). They also earn wages of 3,000 RMB/month ($585), and enjoy social insurance and paid leave.

More than 40,000 such co-operatives have formed

These mechanically harvested corn cobs are laid out in the open to dry on a farm near Beijing.

These combine harvesters (l) are part of the fleet of farm equipment at Jianhu Lantian Agricultural Machinery Co-operative, established in 2007 near Yancheng in Jiangsu Province. Lan Jiasheng (centre) is general manager of the co-op. Co-ops are turning to UAV technology — like this drone spraying a rice paddy (r) in Jiangsu Province — to deal with labour challenges in the agricultural sector.

in China since 2006, doing everything from producing crops and livestock to performing contract field work and providing agronomic training.

The Agricultural Industry Mechanization Association, in turn, works to boost mechanization in the countryside by educating both co-ops and individual farmers in how agronomy and equipment can help increase yields and productivity.

The sheer size and geographic diversity of China makes that a challenging undertaking, though. In northern China, where farm sizes are larger, high-horsepower tractors and combines are widely used, but they're not appropriate in the southern regions of the country where farms and field sizes are much smaller.

It's important to keep in mind, too, that the average size of China's estimated 220 million farms remains at about one-sixth of an acre. Small farmers cling to old ways, so basic things can be hard to change, like corn cobs that are mechanically harvested but are still manually laid out to dry in the open air.

"Many farmers are not well educated, they are 50 to 60 years old, and are slow to adopt new techniques so it takes time," says Yang Lin, vice-president of the Agricultural Industry Mechanization Association.

This has slowed the pace of land reform, but there's no doubt mechanization is setting the course for agriculture's future in China.

Not only can bigger tracts of land be more easily worked with larger farm machinery, increasing yield and productivity, they also address the cost and availability of labour. That seems an almost counterintuitive challenge for a country with a labour force the size of China's, but it's a common lament in the countryside.

The Jianhu Lantian Agricultural Machinery Co-operative was established in 2007 near the city of Yancheng in Jiangsu Province north of Shanghai.

It includes 30,000 MU (2,000 ha) in its home county of Jianhu and another 18,000 MU (1,200 ha) in nearby Lugoutown County and is considered a technology leader in the region, investing in a fleet of modern machinery that includes 15 harvesters, 28 tractors and a UAV.

"I love the mechanization of agriculture and I love planting," says general manager Lan Jiasheng. "But lack of labour is a problem. With many adults going to

CONTINUED ON PAGE 46

the city, it is people aged 60-plus who are working on the land. Labour is hard to get and expensive."

The UAV, which is used to spray rice paddies and small strips of land alongside expressways, cost him 53,000 RMB ($10,000) but that's an investment Lan Jiasheng says can pay for itself in as little as nine days.

With labour at 150 RMB ($30) per person per day, he needs 40 people to spray the amount of land that the UAV can cover in one day — for a total daily cost of 6,000 RMB ($1,200).

GPS technology has also come to Jiangsu Province, population 80 million, and one of China's leading agricultural areas with approximately one million hectares of planted area. Today, about 200 tractors use GPS on the province's big farms, according to local farm equipment dealers, with the next step in innovation and labour-saving technology being precision farming.

It's a similar story at the nearby Liyang Haibin machinery co-operative. They too use UAVs and they've made the switch from semi-automated machinery to fully automated "smart" equipment for planting, harvesting and drying. What a decade ago took 20 workers now requires only four to five people.

Although farmers are starting to pay more attention to brands when it comes to making equipment purchases, return on investment figures prominently in the decision-making process. Equipment is expensive so many farmers outsource their cropping work to third-party contractors, who value the performance and profitability of their investment.

According to Chen Tao, vice-chair of the Chinese Agricultural Machinery Distribution Association, farmers who buy equipment from local dealers for their own

use face an ROI of about six years. This drops to three years if they also do custom work for neighbouring farmers.

"But more popular are co-ops and professional contractors without land who buy and use equipment. They get their return on investment in only one to two years," Tao said.

To support the drive for mechanization, the Beijing central government instituted a subsidy program for agricultural machinery purchases in 2004, providing a 30 per cent subsidy overall for each machine purchased. Some local governments contributed additional funds — up to 20 per cent in some areas — making it attractive for co-ops, farmers and contractors to buy farm equipment.

Of China's three largest crops, wheat production is 90 per cent mechanized, corn harvest mechanization has risen from 40 to 60 per cent in the last three years, and rice paddy planting is approaching a mechanization rate of 40 per cent.

It's unlikely that China will reach its 95 per cent self-sufficiency in food grains by 2020 goal, says Gary Collar, senior vice-president and general manager for Asia Pacific with farm equipment manufacturer AGCO, as the pace of land reform is moving too slowly. But China has seen miraculous change in the last 10 to 15 years and he believes agriculture will hit its mechanization stride.

"Overall, China is mechanizing at a very fast rate. You see this in its infrastructure, so there is no reason to believe that the agricultural sector won't develop just as fast," he says. **CG**

Lilian Schaer is a freelance agricultural writer from Canada who recently travelled to China as part of an Exposure for Development tour organized by the International Federation of Agricultural Journalists.

Uber-stores for food

Businesses like Marcia Woods' FreshSpoke are figuring out how to connect Canadian farmers with the consumers looking for ways to buy from them

BY LOIS HARRIS

Marcia Woods' frustration at not being able to buy the high-quality food that she knew was being grown right down the road evolved into an online business that not only connects farmers with wholesalers, but also solves their transportation and cash-flow headaches.

Coming from a long line of Oxford County farmers in Ontario, Woods, who's now the CEO of FreshSpoke, understands that there was a serious disconnect between those who produce food and those who buy it.

With a background in marketing, and having been a serial entrepreneur in the tech space, Woods and co-founder Henry Quach launched their business in September 2016.

"With the emergence of the sharing economy — and companies like Uber and Airbnb leading the way, we realized crowd-source delivery became an option for solving the food distribution problem," Woods says.

While they initially looked to sell both to consumer and to wholesalers, FreshSpoke evolved into a strictly business-to-business operation with farmers selling to the wholesale retail, restaurant and institutional trade.

"By attacking the problem at the head of the snake — figuring out answers on a business-to-business level, we're reaching the access point where consumers want to buy local," Woods says. She explains that while consumers — especially millennials — are savvy shoppers and want to buy local, they also want the convenience of local shops and restaurants, rather than farmers' markets and on-farm stores.

Woods is one of several people and companies currently working on shaking up traditional food distribution systems.

Going to an online marketplace was also Thorsten Arnold's idea for a local food business model, but Eat Local Grey Bruce is much more like a traditional farm co-operative, while also providing the customer flexibility that's demanded these days.

"We're trying to make buying local food as convenient as shopping in a grocery store," says Arnold, who's the co-op's general manager.

For him, that means a model that draws on small-scale ecological farming, is collaborative, offers a high-quality product and maintains the value of direct marketing while addressing its limitations.

Those limitations for the farmer, he says, include either spending a lot of time at farmers' markets, or, in his case, needing to scale up to make it worthwhile to ship to the Ontario Food Terminal in Toronto.

"It costs about $500 round-trip in transportation, so you have to sell at least $2,500 in products each time to make it worthwhile," he says.

Combining the convenience that customers want while resolving farmers' marketing and distribution hurdles are the reasons Arnold and his colleagues developed Eat Local Grey Bruce. Based in Owen Sound, it works like community-supported agriculture (CSA), but prospective customers aren't locked into receiving a food box every week. Instead, they can order items from a list provided by over 30 full-time local farmers on the website eatlocalgreybruce.ca.

Orders are completely customizable and there's no requirement to order on a regular basis. Orders are delivered to the door, or picked up at central locations in rural areas. Lamblicious, a farm and retail shop 20 minutes west of Owen Sound, is one of the depots.

Arnold says it's not modeled on any one system that's already up and running, but rather combines aspects of a number of different operations. He emigrated from Germany seven years ago with a PhD in agriculture and a background in environmental science.

"I see a very large vision for local food in this world — as a driver of employment and as a way to go forward by integrating the knowledge of ecological systems," he says.

The service had about 450 consumer members as of late 2016.

"This is farmer-driven," Arnold says. "There's a lot of interest — farmers especially see the potential," and he adds that about 60 people attended the co-op's first annual general meeting in October.

In these early stages, Arnold says only a handful of farmers are selling enough product to make an economic impact on their farms — and it's limited by demand, although he's optimistic the business model is sound.

Work is ongoing to encourage farmers in the Hanover and Walkerton areas to join up. And now that it's up and running, Arnold says he will be step down as general manager in order to help the co-op be sustainable through its next growth phase, with his duties taken over by four staff who are currently being trained.

Back at FreshSpoke, 63 producers were on board for selling their products by the end of September and 550 wholesale buyers signed on to the service.

A mobile app was due to launch in December, and Woods anticipated additional sign-ups from buyers at that time.

PHOTO CREDIT: EAT LOCAL GREY/BRUCE

Besides connecting wholesale buyers and producers, the company takes care of logistics and transportation. As of January 2017, Woods says that producers will be able to sign up to make extra money delivering items from other FreshSpoke farms. They will set their own times and schedule pick-ups with the people for whom they will deliver.

Eventually, as a result of anticipated volumes, she says the company will need to employ independent operators through its own dispatch system and, as a third option, will go to established fleet operators.

"It's like Uber, only for commercial drivers," she says, adding that the service opens up opportunities to create jobs in rural communities. Anyone wanting to transport farm products will need to be licensed and have all the appropriate equipment to maintain food safety.

Woods outlines three advantages to farmers signing up to her service: expanding their market access to a qualified group of buyers, getting their goods transported in an efficient way, and improving cash flow.

"We take care of invoicing and collecting payments," she says. "Farmers get paid on the 15th and 29th of the month like clockwork, giving them a predictable payment schedule."

FreshSpoke's fee structure includes prices for beginning producers, small producers and larger, year-round producers. For larger fees, FreshSpoke provides more services. The fees begin on a pay-as-you-go basis for five products with a 6.5 per cent transaction fee up to an $899 annual subscription for up to 500 products with a 4.9 per cent transaction fee.

Woods has big plans for the future of FreshSpoke. When asked if she would be looking at expanding to across Canada, she said she expects that the service will go continent-wide, and could go global. **CG**

The retro Versatile colours are attracting widespread notice, just as the company planned.

PHOTO: VERSATILE

The paint does matter

Versatile draws on inspiration from its past to position itself for future growth

BY SCOTT GARVEY / CG MACHINERY EDITOR

It isn't much of a surprise when Versatile shows up for the annual Manitoba Ag Days. The show, after all, is just two hours from the Versatile factory, so the company's regular attendance is pretty much a given. Local farmers expect to see the brand put in an appearance there every year, and they're never disappointed.

Even so, for the past two consecutive years Versatile's equipment display has managed to become the talk of the show.

It's been a fashion show of sorts that has drawn all the attention. Last year, the company's Legendary Limited Edition four-wheel drive tractors were decked out in a custom livery with loads of chrome trim and a host of special options to stop farmers in their tracks. These LLE tractors were part of Versatile's 50th anniversary celebrations, and only 50 were built.

But the overwhelmingly positive response from farmers who, by and large, loved the retro look wasn't lost on the brand's director of marketing.

"Using the 50th anniversary and the LLE tractors as a jumping-off point, it really became well known to us through our dealers and our customers on social media that Versatile still has not only brand recognition but colour recognition as well, going back to 1966 and even earlier," said Adam Reid, Versatile's director of marketing, during a recent conversation with *Country Guide* at the 2017 Manitoba Ag Days show.

And when he said it, the equipment he was standing in front of sported an all-new, retro-inspired paint scheme that builds on that positive feedback from customers. Reid said the new look is the culmination of a sequence of events that actually started with the company's attendance at a much earlier edition of the show. The event several years ago was the catalyst that led to a complete revamping of the company's entire marketing approach. First and foremost, it resulted in the initial decision to drop the Buhler brand name and give the tractors back their historically significant moniker.

"In 2007, of course, Buhler Industries changed hands," he continued. "The first show the new president came to, when he came to North America, was the Brandon show. At that time, January 2008, we had Farm King products and tractors on display. We had Farm King products at the front and tractors at the back for visibility purposes.

"He had a look around and he was livid, for lack of a better term. He said we want to be a tractor company."

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Versatile debuted a new product-wide look for its products at a Manitoba farm show in January. PHOTO: SCOTT GARVEY

The new paint scheme carries through to the entire brand product line and creates a unified look. PHOTOS: VERSATILE

The display arrangement didn't put the emphasis on the tractors the company was building. It made them seem secondary to other equipment. And the overall marketing approach at the time didn't seem to lend any gravitas to the brand.

"At that time a light bulb went on," Reid continued. "We're already a tractor company, we're just not calling ourselves a tractor company. We have this great historic brand name that we're not using. We're using Buhler instead of Versatile. And that was really what tipped off the whole sequence of events.

"In October 2008 we brought back the Versatile name. At that time we actually Photoshopped and mocked up a couple of tractors, a Genesis and a high-horsepower tractor, with the red and yellow paint scheme, and it looked absolutely terrible. It just wasn't going to work. When I showed it to the president and owners of the company, they didn't like it."

But fast forward to 2015 and the LLE tractor experiment proved it was not only the name that swayed potential buyers, it was the familiar look that many still associated with early Versatile tractors from previous decades.

"Through the summer (of 2015) we started looking at the activities for the 50th anniversary," Reid said. "And it had always been in the back of my mind we should do a retro version of a four-wheel drive. The 50th anniversary was a great opportunity to do that.

"We mocked up what became the Legendary Limited Edition and showed it to the boss. He wasn't really crazy about it. I said, look, you're just going to have to trust us. This is going to be huge. Customers want red, yellow and black on Versatile products."

And they did. Versatile enthusiasts loved it.

"The response from the customers on social media and from trade shows was, 'you should keep that colour,'" he said.

Reid and the executives at Versatile heard that message loud and clear. And now the familiar brand colours are back. The all-new red, yellow and black paint and decal styling that starts as standard treatment on all 2017 model-year equipment draws inspiration from the LLE tractors, but it isn't the same. Those special edition models remain unique. Nor is the new look entirely a return to the past. It is, instead, a kind of modern interpretation that builds on the company's development so far.

"The red, yellow and black paint scheme really brings back memories of Versatile in its heyday between 1966 and 1986," explained Reid. "I think we drew on that, but it was more an evolution of what we'd done. This paint and decal scheme is more of an evolution of what we had before, just incorporating the historic company colours."

Arguably, the red and cream paint scheme that the Buhler brand debuted with many years ago was a little bland, and there is no shortage of red tractors from other companies already out there. Now with not only a heritage name on their flanks, the new look ensures the brand's products are distinct.

"It does a couple of things," Reid said. "One: If you're driving down the highway at 100 km/h and you look across the field, right now if you see a red tractor you may not be 100 per cent sure what red tractor you're looking at. But with the red, yellow and black it really stands out.

"It also brings in all the products we've acquired in the last seven years. It really brings them into the Versatile family. Before they were like add-ons that we slapped a decal on. Now they look like part of the Versatile family. That's been really exciting for us as we roll this out.

"This colour is here to stay. We've made the corporate decision that there is enough history in the Versatile brand and colours that it should continue to be red, yellow and black. So now that applies to the full product line." **CG**


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So history repeats itself

BY GERALD PILGER

Consider for a moment what Canadian agriculture would look like today if farmers had never made the switch from horse power to tractor power. It isn't such an absurd idea if you understand why farmers here actually resisted mechanization when it first appeared roughly a century ago.

An interesting read is the text of the speech called "An Economic Comparison of the Horse Vs. Motor" that H.L. Hare of the University of British Columbia, gave to the North Western Veterinary Association in the early 1920s. His paper was subsequently published in the *Canadian Veterinary Record* (Volume 4, No. 4, 1923).

Hare presented case after case from right across Canada showing that horses were more economically efficient than tractors and trucks. For example, he told of the experience of C.S. Noble of Alberta who in 1918 and 1919 used both trucks and horses to haul grain 20 to 30 miles from the 30,000-acre ranch he was managing to the nearest grain elevators.

Hare wrote: "… even on this long haul, Mr. Noble states that freighting can be done more economically with horses."

Hare backed up the individual cases with statements from revered agricultural educational institutions such as the Ontario Agricultural College, which concluded: "Farm tractors have been used with some degree of success, but speaking generally they have not been a success with the average farmer… "

Then Hare presented studies from the U.S. Department of Agriculture, the Purdue Agricultural Experimental Station, and the Dominion Experimental Farm at Prince Edward Island. All showed the cost per acre of operating a tractor was higher than doing comparable work with horses.

Finally, Hare presented evidence that after their initial tractor purchases, many farmers soon went back to horses.

Hare concluded, "Greater production was achieved but at the expense of economy. Now that the war is over, efficiency and economy are the slogans and we find that horses are fast coming back to their field."

So why did farmers make the switch to the tractor?

While some farmers chose to become early adopters of mechanization, most North American and European farmers were, instead, pushed into the switch.

The First World War had drained farms of both horses and manpower, and farmers were forced to find alternative crop production methods.

This also explains why the number of tractors and trucks sold to farmers actually declined following the war, when government demand for horses dropped off and soldiers returned to farms and rural communities.

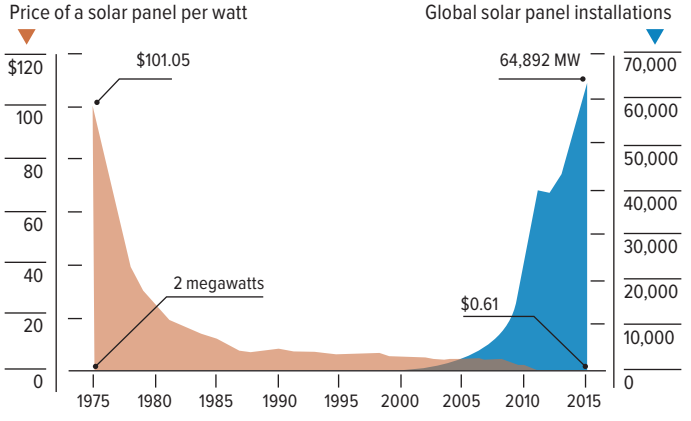

Image: Earth Policy Institute/Bloomberg

WHY HISTORY REPEATS

Today farmers are facing a similar scenario. Society is demanding a cleaner, greener world, and modern agriculture is again caught in the middle.

It is irrelevant whether you as an individual believe in climate change or the need to reduce greenhouse gas emissions. Society as a whole does, and it is taking action to reduce man's carbon footprint globally. Modern agriculture will have to get on board whether we like it or not.

Most Canadian farmers simply cannot understand society's obsession with reducing fossil fuel use. We live in a relatively pristine environment, and if we travel at all, it is likely to be to an even cleaner, greener place like the mountains, northern lakes, or first-class resorts in Mexico, Hawaii or the Caribbean.

However, those postcard-perfect places are not at all like the world that most of the global population resides in.

If you travel to India or China or any major city in the world, you'll experience the pollution they live with. In coastal cities worldwide, as well, you will see first-hand the impact of rising ocean levels. Travel to many equatorial regions and you will see the effect of prolonged drought in the form of dry lake beds and parched soils.

Want to experience the Arctic? No problem; you can even take a cruise ship through the Northwest Passage where just a generation ago no ships could sail.

Now, too, there is an overwhelming consensus among scientists that man is contributing to these environmental and climate change issues.

This is the evidence that is leading societies worldwide to adopt measures designed to reduce man's footprint; from putting a price on carbon to restricting the use of some energy sources like coal and moving to renewable energy sources like wind, water and solar generation.

THE SWITCH TO SOLAR

Without question, the energy source with the greatest potential at this time is solar. We now have the technology to efficiently collect solar power, and in most areas the grid is already in place to distribute power.

But, like our forefathers balking at the use of tractors, the resistance to solar is huge,

CONTINUED ON PAGE 56

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especially among western Canadians who have become dependent on the resource industry.

Go into any coffee shop and you'll hear complaints about the carbon tax and how solar power could never work in the frozen north where we live. You will hear how solar is way too expensive and will never be competitive with fossil fuels, even if it could be generated here.

Farmers complain about the potential loss of farmland for all the solar panels that would be needed. And you will hear over and over again that the politicians who want to shut down the oil sands are basically destroying the economy of Canada simply to appease environmentalists and to clean up the problems of the third world.

But are these doomsday claims accurate?

Just 40 years ago, the United Arab Emirates was a sparsely populated, nomadic desert. Now, it is a globally recognized urban paradise, primarily funded by the sale of oil and natural gas.

But rather than defending the use of the fossil fuels that are the backbone of their economy and that power the mega cities of Abu Dhabi and Dubai, and that even desalinates the sea water needed for the greening of the desert, the UAE is at the forefront of solar power generation.

Dubai Clean Energy Strategy's goal is that seven per cent of Dubai's energy will come from solar power by 2020, 25 per cent by 2030 and 75 per cent by 2050. Rather than continuing to base their economies on a finite resource, they see the future in solar power generation.

Nor is solar nearly as unaffordable as we are being led to believe. The Earth Policy Institute chart shows the price of a solar panel per watt of power generated has declined from US$101.05 in 1975 to US$0.61 in 2015. As a result we have seen solar panel generation go from just two megawatts to 64,892 megawatts over the same 40-year period. And there is no indication either trend will slow or stop.

In September 2016, Bloomberg.com reported that government-owned Abu Dhabi Water and Electricity Authority received a record-low bid of US$2.42 cents a kilowatt-hour for power from a planned facility in the Persian Gulf sheikhdom. This bid was for construction and operation of a 350-megawatt solar plant.

Bloomberg noted this is cheaper than the $2.91/kWh bid made last August in Chile for a solar power plant, or the $2.99/kWh bid for a Dubai solar plant made in May 2016. It went on to point out that these bids reflect a drop of 70 per cent in just the last five years.

Some farmers may argue that solar works in the UAE because it is much farther south and it is in a hot, dry desert location. But such a location is not a requirement for solar generation.

Wikipedia lists the installed PV solar generation by country as of 2015 and the country with the highest solar electrical generation is actually China (43,530 MW), followed by Germany (39,700 MW), Japan (34,410 MW), United States (25,620MW), Italy (18,920 MW), United Kingdom (8,780 MW), France (6,580 MW), and Spain (5,400 MW).

The claims about solar panels displacing farmland are also misleading. Solar panels can be incorporated into existing structures or be built on non-farmland.

Dr. Mark Jacobson, professor of civil and environmental engineering at Stanford was lead author of a 2015 paper entitled "100% clean and renewable wind, water, and sunlight (WWS) all-sector energy roadmaps for the 50 United States." This paper presents a plan for converting the electricity, transportation, heating/cooling, and industry energy requirements for every U.S. state to 80 per cent renewables by 2030 and 100 per cent by 2050. The plan calls for almost half of the energy to be solar, and it says solar collectors would cover less than 0.42 per cent of the U.S.

Compare that land requirement to the massive acreage currently dedicated to biofuel production. Over 40 per cent of the corn crop is used to produce ethanol. And even then, says Dr. Roland Geyer of the Bren School of Environmental Science and Management in Santa Barbara, if the entire corn crop would have been converted to ethanol in 2009, it would have met a mere 17 per cent of the U.S. gasoline needs.

To be fair, the dry distillers grain that remains after ethanol is produced can be used in feed rations. But even after deducting an area amount equivalent to the feed value of DDGs, still 25 per cent of corn acres would be taken for fuel production. And don't forget, there are significant energy inputs required for corn ethanol production including crop inputs, equipment, fuel, distilling, storage, and transportation.

According to Geyer: "Solar power generation is 'hands down' more efficient than photosynthesis." He has compared photovoltaic electrical generation with biofuel production and found "even the most land-use efficient biomass-based pathway (i.e. switchgrass bioelectricity in U.S. counties with hypothetical crop yields of over 24 tonnes/ha) requires 29 times more land than the PV-based alternative in the same locations."

Geyer also notes that PV solar produces usable energy throughout the year, whereas you only get one harvest a year of corn for ethanol.

The one hurdle that must be overcome for solar power to be successful in a northern country like Canada is storage of energy for use when the sun is not shining. Our long winter nights magnify this problem. But our long summer days make solar generation even more viable if power can be stored.

And science is working on this. Just last fall it was announced ethanol could be created from CO2. Such a process could solve energy storage problems and also reduce the greenhouse gas worries. What was not detailed was how much energy is required to convert CO2 to ethanol. Yet, if we have excess power generation from solar during the day, would it be economically feasible to convert CO2 to ethanol to provide fuel for power generation at night?

Or what about simply pumping water up behind a dam using solar-powered pumps when the sun is shining, and relying on hydroelectric generation from that stored water at nights.

Regardless, society's demands for clean energy will disrupt farming as we know it.

Not only will we have to consider new energy sources, but even crop choices will change. Millions of acres of oats, grass, and other feeds that were consumed by draft animals had to change to other crops when tractors and trucks replaced horses. The same thing will happen to the millions of acres of corn wheat and soybeans that are now utilized as biofuels.

The one thing we cannot do is simply sit back and watch as the rest of the world switches away from fossil fuels, or we will end up a third-world producer just like the countries that continue to rely on human and bullock power today.

Simply blaming our current governments will not change this. **CG**

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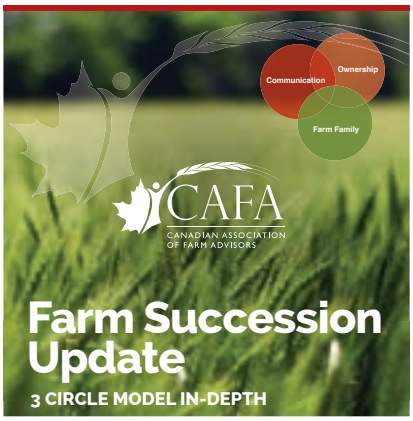
The millennials include our future farmers

BY ANDREW LEACH, CAFA FARM ADVISOR FARM LIFE FINANCIAL

Understanding and learning how to work with the millennial generation of farmers is one of the greatest challenges facing Canadian agriculture today. But millennials are the future of our farms and they are the ones who have the opportunity to revitalize our industry. The key questions we are facing are "How do we work alongside of them?" and "How can we help get them prepared to take control of our farms?"

First, we must understand them. A millennial is a person born between 1982 and 1994. But it is not their age that defines them, it is their abilities. Millennials are tech-savvy, resourceful and energetic. Their ability to find solutions with just a touch of a button is often misunderstood as laziness. We need to adjust how we view our millennials. They have traits we need to pay attention too that will help us learn how to overcome the biggest barrier we have on today's farms: communication.

To better communicate with millennials we must first look at the barriers facing them. Rising land values are making it almost



impossible for young farmers to begin a successful farming operation of their own. Therefore, many are forced to look at their family farms to secure a farming future. But the challenge we face is many Canadian farmers are not ready relinquish control of the farm until well into their retirement years. It's a discouraging environment for our successors. To keep our young farmers motivated, we need to show them the plan for their future. By talking to them, respecting their ideas and developing a career path in partnership with them, we can help keep the next generation committed to the farm.

Millennials crave respect. They want to be heard and they want their ideas considered and not easily dismissed. Having discussions now with them about the farms future and really asking their opinions or concerns, will help ensure we can keep young farmers farming. A great way to encourage open communication is to engage the services of a qualified succession planner who can help facilitate courageous conversations and help align the goals of each family member. Having a professional working alongside your family can help ease the burden of those difficult conversations and protect your family harmony.

The Canadian Association of Farm Advisors consists of professionals from across the country who are certified to help farmers with their financial and succession planning needs. By engaging a CAFA-certified advisor to help with succession planning on your farm, you can be assured that a clear and concise plan will be created to protect your farm's legacy for generations to come.

To learn more about communicating with millennials , register for CAFA's farm Succession Update on March 23 in Ottawa at www.cafanet.ca/farm-succession-agenda-Ottawa

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Check this Chicago school

Near the top in the academic rankings in Chicago, this high school transforms city kids into graduates eager for careers in agriculture

BY BECKY PARKER

Rarely does someone wish they could go back to high school, but that was certainly the feeling I had when I toured a school in Chicago last June during my Nuffield Scholarship.

The institution is about 30 km south of downtown Chicago, and in many ways, it is a standard high school. It has lockers, classrooms, and a gymnasium.

However, there is something unique about CHSAS. Every single student here is studying agriculture.

CHSAS stands for Chicago High School of Agricultural Sciences. The school sits on 72 acres, 39 of which are a working farm. There is also a greenhouse, an aquaponics lab, livestock barn, bee hives, and a fully equipped food science lab.

As I travelled through the halls, the pride and enthusiasm were palpable. Sheila Fowler, the school's vice-principal, notices that unique feeling at CHSAS too. "Our relatively small student population allows CHSAS to maintain a family-like atmosphere which is characteristic of many agricultural organizations throughout America," she says.

And it's true. There is a family-like quality to the interactions here. The two young women who led me around barely stopped talking, eagerly telling me about their experiences as students, as we moved from one area of the school to the next.

SOMETHING FOR EVERY INTEREST

Like most high schools, student course selections are fairly generalized for students entering their first year. However, by Grade 11 each student at CHSAS selects a career pathway to focus on as they complete their high school journey.

Pathway options include agricultural education, agricultural finance and economics, agricultural mechanics and technology, animal science, food science and technology, and horticulture.

This school year a biotechnology pathway was also added to round out the lineup of options.

For my first stop, my tour guides led me to the school greenhouse, home of the horticulture pathway. The greenhouse was beyond steamy on that summery day, so we moved our conversation to the classroom where the walls were covered with landscape plans. At the back of the room was a business centre, complete with computers and stacks of textbooks on horticulture and plant propagation.

I heard from the horticulture students that while they do a lot of planning and paperwork, the learning is definitely focused on hands-on experience. Within each of the pathways, students develop theoretical knowledge in classroom instruction and hands-on technical skills through practical projects. According to Fowler, the agriculture classes "are designed to give students ownership of projects. Students have a vested interest in making sure their work is successful."

Each spring the horticulture pathway works together with the ag mechanics pathway to put together a display for the Flower and Garden Show held in downtown Chicago. It is an opportunity for students to put their skills to the test, competing against other schools and also established businesses. They also plan, advertise, and facilitate a plant sale each year for the local community.

BUILDING BUSINESS SKILLS

Business skills are top of mind in all of the pathways. Every student at CHSAS is a member of Future Farmers of America (FFA), which requires them to complete, among other activities, a Supervised Agricultural Experience (SAE). An SAE can take many different forms, such as entrepreneurial ventures, internships, or even school-based enterprises.

At CHSAS, one of the school-based enterprises is a farm stand that sells produce grown on the school grounds. It is managed by the ag finance and economics pathway, whose students were sitting in front of computers, working on their final projects as I entered their classroom.

I asked this group if they enjoy attending such a unique high school. A young man piped up and said "it's great. You get to actually do stuff, not just read about it." He explained that one of their first projects that year had been on investments. They chose real stocks and competed against each other to see which selections were most profitable.

"So what kind of stocks did you choose?" I asked. They responded that a portion of their selections had to be agri-business stocks, and they had been surprised by the number of agricultural options.

"I never knew that there were so many companies that sell tractors!" exclaimed one student.

That lack of familiarity with agriculture businesses is probably because these students don't come from a farming or agriculture background. Every student here lives within the city limits of Chicago.

The "FFA" stands for Future Farmers of America, yet none of these urban Chicao students had any farm background before attending CHSAS.

CHALLENGING STEREOTYPES

The school's mission statement is ambitious, saying CHSAS "… provides opportunities for diverse students from across the city to study agriculture with the goal of developing marketable skills as well as college level competencies."

The integration of academic and agricultural programs helps students see beyond old farming stereotypes. There may be a barn, tractors, and crops on campus, but students quickly realize agriculture is more than primary production, and that agriculture is good for our economy, environment, and culture.

Not surprisingly, there are stereotypes about the school. Many people in the city of Chicago refer to CHSAS as "the farm school," and a few of the students I spoke to were initially apprehensive about attending, based on that description.

Despite a country nickname, CHSAS has a track record of success that attracts students from across the city. In 2016 the school received a 1+ rating, the highest score from the Chicago Public Schools.

Other statistics are impressive too: a four-year graduation rate of 81.1 per cent, college enrollment at 79.8 per cent, and a dropout rate of only 2.1 per cent.

LEARNERS INTO LEADERS

In addition to specific agricultural competencies, there is a clear emphasis on developing employability and soft skills, such as communications and teamwork.

"Students know that it's important to be academically strong, but they also know it's equally important to be a good worker," says Fowler, who is also the FFA adviser for the school.

FFA activities are designed to foster leadership skills and personal growth in youth. Competitions, conferences and conventions equip students with essential skills for career success.

Through participation in these youth development activities, the students gain confidence in their abilities and have the chance to interact with leaders in the agricultural field.

In fact, CHSAS prides itself on connecting with the agricultural community. During my visit, a steady stream of students headed to a classroom where interviews for a summer internship at a prominent agri-business were taking place.

It turns out that a pathway to an agriculture career is fairly common. On average, approximately 37 per cent of a CHSAS graduating class declare an ag-related major as they enter college. Those who move on to jobs within the agri-food sector often come back to the school to speak to students about their career and offer guidance and advice on entering the workforce.

The success of CHSAS highlights the value of emphasizing experiential learning and soft skills. Much can be learned from the integration of agriculture, education, and a strong youth development system like FFA.

With the pervasive labour shortage facing the agri-food sector, wouldn't it be great to see 37 per cent of all graduating high school classes choosing agriculture pathways?

Whether or not the road leads to agriculture for individual students, the most important thing is that their agricultural training helps them leave high school with competence and confidence. Fowler knows that her graduates are ready to meet the world head on. "Students have the skills necessary to thrive," she tells me. "They can conduct themselves as young professionals."

For more information on CHSAS visit: www.chicago-agr.org/. **CG**

Vacations: Why do you need them?

Levels of stress, anxiety, and burnout have never been so high across all industries, but we see it particularly in the farming business.

Even though technology purports to simplify our lives, we're experiencing more and more over-investment in work. Many farmers tell me they're exhausted, with no time to catch up. Moreover, everyone wants it all — the perfect family, a successful business, fabulous health, and complete happiness.

We have many roles, and each of these roles requires time, energy and commitment.

Quickly, we find that our tank of energy is depleted, and we have to refill. But how?

To recover from a day's work, we must start by sleeping well. About 95 per cent of us need seven to nine hours of sleep per night. Sleeping less has an impact on your concentration, productivity, and mood.

However, to re-energize, protect oneself from psychological distress, prevent burnout, and increase well-being, creativity, and productivity, people need more than just a good night's sleep. Get more from your breaks, holidays, and vacations by incorporating one or more these beneficial ingredients.

1. PSYCHOLOGICAL DETACHMENT means not thinking about work and other sources of stress.

A vacation break must achieve physical, mental, and virtual distance. This is not easy when all the business papers are on the kitchen table. This is why it is sometimes necessary to leave your physical places of work from time to time. In the last few years, we have come to face a new reality: the danger of always being connected.

As Dr. Christine Grant, an occupational psychologist at Coventry University's Centre for Research in Psychology, told the BBC: "The negative impacts of this 'always on' culture are that your mind is never resting, you're not giving your body time to recover, so you're always stressed."

Plus, we now know that the more tired and stressed we become, the more mistakes we make. We increase our risk of accidents, and our mental health suffers. This is why in order to have that mental break, we have to disconnect from that phone.

You can have a wonderful week on the beach in Mexico. However, with all the apps that keep you updated 24/7 about your herd or your field, you lose the benefit of your vacation. Some farmers become addicted to productivity. They follow the fertility, health, and feeding information of every cow in the herd… even from the beach. It might be good for the productivity of their cows, but it's detrimental to the farmer and their spouse.

2. RELAXATION is the ability to access a low level of physical and mental activation.

Relaxation can be accomplished by practising simple breathing, meditation, yoga or walking, or by watching a good movie.

Now, a little bit of stress is actually good. The goal is to find balance. Adrenaline rushes can help get a person through a long day. However, we cannot be always on "high." Our bodies and minds need to relax. There is no need to go to meditate in Tibet. Just take five minutes of down time to decrease your cortisol levels for a couple of hours.

3. PERSONAL CONTROL is valuable. Developing new skills such as learning a new language, a musical instrument, or a new sport helps to de-stress. Learning or doing something else at a relaxed pace completely detaches the individual from work.

4. CONTROL OVER FREE TIME: The perception of having choices about how to spend your free time.

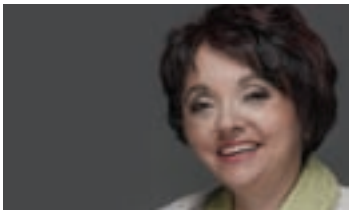
Some people try to see or do everything on holidays. A vacation won't help if you pack it with too many activities. It's fine to plan some tasks on a weekend or a vacation, but don't fill all your down time.

There needs to be a concentrated effort to find the balance that your body and mind need to not just survive but to feel vitality. In order to maintain this balance, the individual must rely more on micro-breaks, or short holidays. Although beneficial to long-term physical health, a week or two weeks of vacation may have short-lived benefits for psychological well-being. The benefits can last anywhere from a few days to few weeks. After that, there is a return to the same level of well-being you experienced before the wonderful week of vacation.

A one-week holiday per year is necessary but not sufficient. Regular, short holidays, quiet evenings at home, relaxed weekends, and daily breaks are essential to maintaining our physical and mental health.

You may think you have no time for that. As a client told me, "Life goes too fast, and there is so much to do." But instead of asking yourself if you can afford to take a little more time to refuel, perhaps you should ask yourself if you can afford not to.

Years ago, we considered Sunday sacred. It was the rest day. Today we consider it an opportunity to get a jump on our to-do lists. We have forgotten that even nature has its own cycles to rest. So, if Mother Nature needs it, why not you? **CG**



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Raise resilient kids

How? Share your family stories with them. Research proves it's a strategy that works

BY HELEN LAMMERS-HELPS

My parents came to Canada from the Netherlands after the Second World War. They came with very little money and only a few words of English, but they had a dream to own their own farm.

Through hard work, diligence and a positive attitude, they were successful. But it wasn't easy and when I have been faced with a challenge, I get the encouragement I need to persevere by reflecting on everything they went through.

I have also seen first-hand how my own children have been inspired by their grandparents' story.

This family story is the kind of narrative that researchers say helps children to be more resilient. The stories where a parent or grandparent "makes lemonade from lemons" are among the most powerful, says Dr. Anne Fishel, a family therapist and professor at Harvard Medical School.

"When children hear stories of how a relative got through something difficult, it's associated with a greater sense of well-being as adults," Fishel says. "It's helpful for them to know that the adults in their lives have struggled and overcome challenges."

"When children learn that they are part of something bigger than themselves, that they are connected to previous generations, it gives them a sense of possibility," she adds.

The value of storytelling was first studied scientifically at Emory University in Atlanta, Georgia, by Marshall P. Duke and Robyn Fulvish. Their research team noted that children who knew their family background such as how their parents met, how their name had been chosen, and where their grandparents grew up, scored higher on measures of self-reliance,.

The researchers developed a questionnaire to test children's knowledge of family history, including knowledge they could only have learned through hearing family stories. Children who scored high on this test tended to come from families that functioned better. These children also demonstrated low levels of anxiety and depression, and were more likely to believe that they can control their own fate.

In their desire to protect their children, some parents think they should avoid sharing stories about the tragedies or traumas that family members have experienced. However, Fishel says that if these stories are told with sensitivity when the child is at an appropriate age (over the age of 12), they can help children see that it is possible to overcome difficult events.

"The problem with not telling important parts of your family's history, particularly the painful parts, is that secrets have tremendous power. Children often sense that there is something they aren't being told. In an effort to make sense of a mystery, they often make up an even worse story," she says. "And they grow up with the belief that there are things too terrible to speak about, and this can be a real burden."

Telling stories — especially stories about bad luck turning into something good — also benefits the adult storytellers. In a recent study, adults who told such stories showed higher levels of well-being, Fishel says.

The key is to create opportunities to talk without competition from the TV, smartphones and iPads. Family meals are ideal times for these conversations as long as there are no screens at the table. While Fishel reports only about 10 per cent of conversations around the kitchen table are family stories, they get remembered, and they have a big cumulative impact.

Not sure where to begin? Keep in mind that children enjoy hearing stories about when you were their age, says Fishel. You could tell them about a favourite 4-H calf, the experience of moving from one place to another, your holiday rituals, or a chore you didn't like doing as a child, for example. "These stories have the potential to teach important family values, to entertain, and to stretch a child's understanding of the world," she says.

Family gatherings are another place where children can learn about their family history. Children can ask older relatives what things were like when they were growing up. What school did they go to, and what did they learn at school? How has the farm changed through the years? How many and what kind of livestock were there? How has the technology used on the farm changed? What did people do for fun?

These stories can become part of a person's legacy that they leave for future generations.

Old photo albums can serve as reminders to spark the recounting of old stories. You could scan some of the old photos (or even use your smartphone to take pictures of them) so you can frame them or create a scrapbook. To preserve the stories, take notes or use the voice recorder on your smartphone. Too often when an older family member dies, their stories die with them.

In addition to hearing family stories, children should be encouraged to recount their own stories. Children who learn to tell stories become better readers, Fishel

notes. Parents can prompt their children to talk about their day by using how, when and why questions.

Storytelling games can also be a fun shared family activity at the dinner table. For example, you can play a game where one person begins with a sentence and each person at the dinner table adds a sentence to propel the story along. The game helps children learn the elements of a good story and its structure, with a beginning, middle and end, interesting characters and plot twists.

"Highs and lows" is another game you can play around the kitchen table. Everyone takes a turn recounting one bad thing that happened to them that day and one good thing. This helps children learn how to handle the ups and down of life, says Fishel. By sharing the highs and lows of your day, your children will have a better understanding of the realities of farming. It also gives parents the opportunity to model problem solving, team work and communication skills.

As agriculture continues to change quickly, family narratives of how past generations innovated and adapted to change can help ground children and prepare them to embrace the changes to come. **CG**

RESOURCES

Home for Dinner: Mixing Food, Fun, and Conversation for a Happier Family and Healthier Kids by Dr. Anne Fishel

THE EMBARRASSMENT of hemorrhoids

Hemorrhoids are common, with anywhere from 50 to 80 per cent of Canadians having experienced them. It is difficult to determine the number more accurately, however, because many people do not report having hemorrhoids or, alternatively, they successfully self treat.

Hemorrhoids are anal cushions which become inflamed and swollen. Internal ones remain within the anal canal; external ones protrude. So now you know why no one talks about their hemorrhoids!

It's easy to understand why no one likes to talk about hemorrhoids, but at the very least you need to know when to get checked

Hemorrhoids affect men and women equally, with the exception of women during pregnancy. An increase in abdominal pressure, especially during the last months of pregnancy, usually accounts for these hemorrhoids, and they often resolve after delivery.

People 45 years and older are more often affected, although there seems to be no family tendency, with the exception of similar low-fibre diets among family members.

Heavy lifting, prolonged standing or sitting, prolonged sitting at toilet, and severe pushing or straining when defecating are contributing factors. Hard, dry stools are difficult to pass and worsen hemorrhoids, which is why diets low in fibre and fluids can also be contributing factors.

Often, however, no one cause can be identified. Instead, hemorrhoids result from a combination of factors.

Usually, the first sign of hemorrhoids is bright red blood on used toilet tissue as the result of a stool scraping across the surface of hemorrhoids and causing the bleeding. They are classified according to the degree of severity, with the most severe associated with the risk of thrombosis or blood clots and even gangrene.

Yes, it may be embarrassing, but if you see signs of hemorrhoids, or for that matter any colour of blood on used toilet tissue, you need to get it checked.

The characteristic symptoms of hemorrhoids include itching, pain, swelling, burning, and discomfort, but internal hemorrhoids are not painful because there are no pain receptors in the anal canal.

Ideally, you want to treat the symptoms so you are more comfortable and so that healing occurs. Creams, ointments and suppositories are available. Ointments are greasier, but remain on tissues longer. Suppositories may have limited use because they slip too far into the anal canal, past the site of the hemorrhoids. You may still want to use a suppository due to their ease of use, but to reduce their movement too high, after insertion lie on your side for about five minutes.

Hemorrhoid remedies are usually a combination of local anesthetics for pain, topical steroids like hydrocortisone for inflammation, astringents to promote healing, and protectants to provide a physical barrier against further damage.

Remember to cleanse the area thoroughly before applying any remedy and to wash your hands before and after application.

None of these products are recommended for children 12 and younger, who should have their symptoms evaluated. And, if your symptoms don't improve within seven days, you also need your symptoms to be checked.

For pain, consider acetaminophen. Avoid any narcotic pain relievers because they can contribute to constipation and the worsening of symptoms. With severe hemorrhoids, injections, rubber band ligation, and even surgery may be needed.

You most likely would prefer prevention. Don't sit for more than one to two minutes on the toilet. Also make sure your diet is high in fibre and fluids, and to prevent complications, cleanse well after defecating.

If you have hemorrhoids, try a Sitz bath, sitting in a tub of warm water for about 15 minutes.

You don't want to talk about your hemorrhoids at the dinner table, but don't ignore them. **CG**

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

NEXT ISSUE

Head lice seem to proliferate these days, and treatment recommendations have changed. Sending infested children home from school has an impact on the treatment approaches, as has resistance to some treatments. Next issue, we'll look at lice and the most recent strategies.

All down the generations

"Sometimes," said Ed, "an old man has to just sit back and pretend not to mind what happens."

Jeff was boiling water for tea while Elaine sorted out the last of the papers, still warm from the printer. Jeff's parents, Dale and Donna, had just walked over from their house across the yard and were settling into chairs around the dining room table.

Six-year-old Connor shouted out from his bedroom. "Mommy, I'm thirsty."

"I thought you were asleep," Elaine called back.

"I'll take him some water," Donna said. "I haven't seen him all day. Don't worry Connor, Grandma's coming!"

Finally, Connor was quiet, the tea had steeped, and the four adults were poring over spreadsheet printouts. Jeff had his laptop open, just in case anyone had changes to suggest, or wanted to look at some information Elaine hadn't printed.

"Well," Jeff said. "I think this is what we're going to do.

"Geez, I wish we didn't have to plant so much wheat," Dale said. This wasn't the first time Dale had seen Jeff and Elaine's seeding plans for the 2017 season. They'd been working on it since before Christmas, and were now taking one last look to make sure everyone knew what crops they were planting where.

Commercial wheat was penciling in as the least profitable crop the Hansons were planning to put in the ground. "I know, Dad," Jeff said. "But we've got to have some cereals in the rotation."

"I hope we don't have to spray for midge. But you're right. We have to plant some," Dale said. "I think this plan works. The numbers look okay. But do you really think green lentil prices are going to be this low?"

Jeff raised an eyebrow at Elaine. He'd said that same thing the day before, and Elaine had spent hours digging up forecasts and statistics to make her case. She found that stack of paper in the office, and it didn't take long for her to convince Dale too.

"Wait a minute," Donna said. "Are you planning to put those gluten-free oats on the Dixon quarter?"

"Yes," Jeff said.

"Didn't you seed half of that quarter to wheat in 2015?"

"Oh heck!" Jeff said. "I forgot about that!"

The specialty oat processors only bought oats seeded on land where no wheat had been seeded for two previous years.

"Wait a minute," said Donna. "Didn't you seed half of that quarter to wheat in 2015?"

"We'll have to change that!" Jeff said. He turned to his laptop and started moving things around.

After they found another place for the oats, made a few other changes, double-checked the math to make sure they had enough fertilizer and seed ordered and on hand, Dale and Donna put on their coats and went home.

Jeff took the empty mugs to the kitchen sink while Elaine gathered up the papers. "That was fun," Elaine said.

Jeff laughed. "Having Mom point out our mistake was fun?"

"It's a good thing she saw that… But it's pretty great that we get to be in charge of such a big project."

Jeff hadn't thought of it that way.

"I guess," he said. He thought of a friend from university. "Dave's in charge of all the marketing for a big new fungicide. He's got a huge budget, but he calls me at least once a week to complain that his boss keeps meddling with the details."

"And if seeding isn't a big project, why was Visa investigating us for money laundering?" Even though they had pre-paid their credit card account, when Elaine had paid for a large fertilizer purchase with the farm credit card in December, the dollar cost had been so high that Visa had put a hold on their card for seven days to investigate unusual spending.

"You're right," Jeff said. "This is pretty great."

"You don't want more tea, do you?" Jeff asked, while he finished cleaning up.

On their way across the yard, Dale and Donna were on the other side of the equation.

"Doesn't it seem strange, not being the final voice on these decisions anymore?" Donna asked her husband.

"Yeah," Dale said. "It's hard to watch. They're seeding way too much land to canola."

"Do you think so? You didn't say anything."

Dale took some time to answer. They heard the gravel crunch under their feet, then a coyote howling in

CONTINUED ON PAGE 66

the distance. The dog started to bark and Donna reached over and took Dale's hand.

Finally he spoke. "It seems like just last year that I was that young guy, making the decisions while my dad tried to stand back and hold his tongue."

"You did well," Donna said. "And I'm glad you take Elaine's opinions more seriously than Ed took mine."

"Times have changed," Dale said. "And Elaine's pretty sharp."

Donna glared at Dale until he caught himself.

"That's not what I meant," he said. "Of course you're sharp too! You caught the problem with the Dixon quarter."

"I know," Donna laughed, although she also added, "Elaine's keeping all of us on our toes."

Thirty miles away, Dale's father Ed and his girlfriend Helen were sipping hot chocolate with extra marshmallows in Ed's condo while they watched the latest episode of "The Bachelor." (The week before Helen had told Donna, "I know, it's silly for someone my age to have a guilty pleasure like that. Ed pretends to hate it, but he likes watching that red-haired girl stir up trouble just as much as I do.")

When the show cut to a commercial break, Ed stirred the last of his hot chocolate and sighed.

"They're all getting together out at the farm tonight to plan out next year's crop," he said.

"Why didn't you say something?' Helen said. "We could've gone out."

"Ach. It's a little rainy. Could get icy. Neither of us are great night drivers. And I know how much you like watching this damn dating show."

"If you'd asked, I'm sure they would've done it during daylight hours."

"I thought of that."

Ed went off to the bathroom. By the time he came back, the commercial was over. It was another 10 minutes before he and Helen talked about it again.

"I remember my dad," Ed said.

"Oh?" Helen didn't know a lot about Ed's father, but she knew William Hanson had been the first Hanson on the land. He'd left his parents and sisters behind to come West with his brother, before Ed was born.

"Even when he was an old man and he could hardly climb up on the tractor I couldn't get him to stop telling me what to do. I almost started to hate him. So I tried to back off so Dale could take charge. Now Dale's trying to back off and let Jeff learn the hard way. They don't need me getting in the way of that fancy tango."

"I understand," Helen said.

"Sometimes an old man has to just sit back and pretend not to mind what happens…" He paused. "Besides, it won't be long before Dale's sitting in town watching trash TV while Jeff tries to let little Connor make all the decisions."

Helen moved closer to Ed on the couch.

"But that kid's going to plant way too much canola. And I sure hope they don't go ahead and put those premium oats on the Dixon quarter. We had wheat there back in 2015." **CG**

Leeann Minogue is the editor of *Grainews*, a playwright and part of a family grain farm in southeastern Saskatchewan.

REFLECTIONS

BY ROD ANDREWS
RETIRED ANGLICAN BISHOP

The funeral director greets me at the door of the church. "If you don't mind sitting in the front row, I have a place for you." Leaving no time to respond he heads up the aisle with me following. He points out a single seat, hands me a bulletin and hymn sheet and, with professionalism only a funeral director can muster, returns to greet the next guests.

A magnificent grand piano sits a few feet in front of me, with neither a speck of dust nor a fingerprint on its polished surface. The lady playing the piano methodically works her way through a book of hymns, some old and familiar, others written in recent decades. She has long blonde hair. The bulletin says her name is Kristine. Her hands glide over the piano keys. She reads marks and symbols on her music sheets and turns them into inspiring and moving music. When she reaches the end of a page, she flips to the next page without missing a note.

My friend Dan Skaret died a few days earlier. Dan was my skip in a Monday morning clergy curling league. He was a keen curler, always plotting where to place the next rock. The game rarely followed Dan's plan but he accepted the weaknesses of his team. He demonstrated noble virtues such as forgiveness and giving people another chance. Each year Dan competed in the Friars' Briar, the Canadian clergy curling championship. He invited me to join his team for the Briar in Okotoks, Alta. We had high hopes of winning, but we lost game after game. Dan was cheerful and kept his good humour.

Two of my curling associates sat behind me during the funeral. When it came time to sing the pianist brought even more volume and depth from her splendid instrument. Dave and Gary could have performed a duet. I marvelled at the musical skills of the lady named Kristine and the two men singing in my ear.

The pastor of the church said Dan had chosen the hymns himself. The service concluded with "Ode to Joy" by Beethoven. I arrived feeling sad that I would no longer curl with Dan, or share a beverage of some description after a game. I don't remember much of what the preacher said, but I was moved and uplifted by the music.

Sometimes people assume all clergy can sing. I missed that talent. I attended the funeral of a United church minister in Watrous, Sask. The church was full when I arrived so the usher seated me in a corner behind the choir. Other clergy of various denominations were seated there also. During the service the minister announced "all the clergy will now stand and join the choir to sing an anthem." I had come to attend the funeral of a friend and ended up in the choir! I took comfort in words from the Bible "Make a joyful noise to the Lord…"

When the Anglican church in Viscount, Sask., closed, the organ was transported by truck and barge to Stanley Mission on the Churchill River in northern Saskatchewan. It is a large and impressive instrument. It seemed too big for the small Viscount church. The story, now a legend, is that in the 1920s a woman bought it for the Presbyterian church where she played it herself. When she had a fight with the Presbyterians over church union she began playing for the Anglicans and took her organ up the street with her.

Suggested Scripture: 2 Chronicles 5:11-14, Psalm 100

Rod Andrews is a retired Anglican bishop. He lives in Saskatoon.


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