END OF AN ERA?

Canadians go to the polls this fall
Attention Growers
Announcing changes to pesticide return programs—and they’re as easy as 1-2-3.

1. **Bulk Containers**
   - Return all bulk pesticide containers to your crop inputs retailer. Do not return any bulk containers to municipal collection sites.

2. **Obsolete Pesticides**
   - Store all obsolete pesticides safely on-farm until called in for scheduled pick up at designated collection sites.

3. **Small Pesticide Containers**
   - Continue to return small pesticide containers (under 23L) to your local municipal collection site.

**REMEMBER:**
Triple rinsing containers is essential!

These changes are now in effect and more detail can be found at cleanfarms.ca. Thank you Alberta growers for your cooperation and leadership in ag-waste stewardship.
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By Scott Rollans
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Words, words, words

ANYTHING WORTH DOING IS WORTH DOING WELL

AS AN EDITOR, I HAVE A PENDANT for words and grammar. I enjoy learning new words and their definitions, too. I’d venture to guess that as people learn words, myself included, they can evolve and take on new meanings. Perhaps this is what gave rise to political satirist Stephen Colbert’s word “truthiness,” which is now in the dictionary.

In the 1987 cult classic The Princess Bride, Spanish swordsman Inigo Montoya works to find the man who killed his father and avenge his death. One famous scene shows Montoya and his friends Vizzini and Fezzik trying to lose a man who’s tracking them. Vizzini’s repeated use of the word “inconceivable” perturbs Montoya. It causes him to remark: “You keep using that word. I do not think it means what you think it means.”

If Montoya worked in agriculture, he would surely be making that same comment, but with regards to the word “consultation.” It’s a real buzzword in our industry—a feel-good phrase used by many, but understood by few. An honorable mention goes to the word “sustainability,” and the people who try to hit that moving target (p. 22).

Recently, the Canadian Grain Commission engaged in “consultation” with stakeholders on its idea to shift 29 wheat varieties into a different, yet-to-be-created class (p. 7). There’s also been “consultation” in Ontario between government and farmers about the use of neonicots (p. 26). Lastly, the government of Alberta has been having “consultation” with industry leaders about occupational health and safety regulations (p. 38).

When “consultation” becomes known as a small group of people informing a large group of people about what they’re going to do, we’re pushing the word to its grammatical fringes.

I believe the appropriate word here is “afterthought.” That is, an item or thing that is thought of or added after you’ve already decided on a course of action. Consultation means meeting for deliberation, discussion or decision. Too often, this word ends up serving as window dressing for what in reality is little more than a recap or a “heads-up” of a predetermined decision. While this type of consultation is true by the letter of the word, perhaps it’s best explained as breaking the spirit of the word—that is, not everyone gave their thoughts, their thoughts were given short shrift, or the timing was bad.

As you read this issue, you’ll see that consultation has become a word with a new definition, one with its own truthiness. In many instances, the results of consultation end up supporting what the sponsoring agency intended to do in the first place. Do your core values line up with theirs? Great. If not? Oh well.

It seems high time to make a new word for what consultations have become in the world of agriculture. How about “consultrytion”? It’s born out of “consult” and “try.” It means you attempt to gather individuals for a meeting of information, but if nobody participates, or if their opinions don’t line up with a predetermined outcome, you can still say you tried, which covers your moral bases.

Farmers need to make sure “consultation” doesn’t morph into “consultrytion” for their own sake.

BY TREVOR BACQUE
CLASS ACTION
WHEAT TALK STIRS UP THE CHAFF

EVERYONE WANTS THE WORLD to recognize Canada as a producer of high-quality wheat. Not everyone agrees that moving 29 well-established wheat varieties into a new, currently unnamed class is the right way to go.

The Canadian Grain Commission (CGC), which launched the reclassification review earlier this year, said the process will increase confidence among domestic and international customers looking for high-quality milling wheat. However, some western farmers and industry associations see it as a move that will essentially bench several valuable varieties, reduce the choices available to farmers and create an expensive logistics issue at all levels.

In February 2015, the CGC announced it was launching a wheat reclassification consultation. The CGC proposed that new check varieties be established for the Canada Western Red Spring (CWRS) and Canada Prairie Spring Red (CPSR) classes to improve the quality parameters of those classes. It would then evaluate all existing varieties and any that no longer met the standards would be moved to another class. The Commission also proposed the establishment of a new Western Canada milling class.

In August 2015, the CGC announced, after industry consultation, that 29 wheat varieties had been identified for reclassification. That included 25 varieties—many of them well known—in the CWRS class and four varieties in the CPSR class. The plan is, after more input from industry players, to reclassify these 29 varieties from their respective ranks and place the majority of them in the new class. The 29 varieties would remain in their respective classes until Aug. 1, 2017.

The reclassification is necessary to “maintain customer confidence in Canadian wheat quality,” said Jim Smolik, assistant chief commissioner at the CGC. Virtually all of these varieties just barely met the quality standards for the class when they were originally registered, said Smolik. New, improved check varieties have come along, and quality parameters are always being reviewed. With the environmental conditions seen in recent growing seasons, some of the varieties are always at the bottom or don’t even meet the CWRS and CPSR quality standards.

“With our CWRS wheats, gluten strength is one important factor,” said Smolik. “And customers are looking to Canada to supply wheat with a consistent quality.” If these lower-quality wheats affect customer confidence, it affects Canada’s wheat-marketing efforts. Farmers will still be able to grow the reclassified wheat varieties, and Smolik pointed out they may have an excellent fit in new and emerging world markets for products such as pan breads and noodles.

There has been a range of reactions to the reclassification proposal.
The Western Canadian Wheat Growers Association agrees with the plan. “The Wheat Growers support the move by the Commission to restore the quality and integrity of the top milling classes of wheat,” said Levi Wood, president. “This move should address concerns expressed by customers in the past several years regarding the low gluten strength in Canadian wheat shipments.”

Cereals Canada, which represents a cross-section of the grain industry, including producers, processors, shippers, handlers and seed companies, said the intention to protect Canada’s quality wheat reputation is good. But its president, Cam Dahl, said Cereals Canada believes that creating another class will raise a logistics nightmare on the handling side and that “costs will outweigh the benefits.”

From a producer’s point of view, Henry Vos, who farms at Fairview and is a director of the Alberta Wheat Commission (AWC), doesn’t like the plan at all. “I am not very impressed with how this has been handled,” said Vos. “Farmers have been growing some of these varieties for 50 years, and we’re just saying now they don’t have CWRS quality? This doesn’t make sense.”

Vos said it should be up to the value chain—including producers, marketers and customers—to decide what to do with these wheats, and not a regulatory bystander such as the CGC.

He said reclassifying these wheats will remove 29 varieties from producer options and remove a lot of good wheat genetics and agronomics from Western Canada. “As this goes ahead, we won’t need a new classification,” he said. “Because the perception now of these 29 varieties is that they are lower quality. It will be an excuse for grain companies to lower prices. No one will grow [the varieties], and eventually [they] will drop from the market.”

AWC favours a natural phase-out of the varieties over time and questions whether they are having a material impact on the quality of Canadian shipments. AWC also contends that insufficient market development work has been done to support a new milling class.
G3 EXPANDS EXPORT POTENTIAL

PLANS FOR A NEW TERMINAL COULD OPEN UP EASTERN MARKETS

WITH THE REBRANDING OF THE Canadian Wheat Board complete, G3 Canada Limited has announced expansion plans that will solidify its network in the East and create a new, more robust grain-transportation corridor to the West. The investment, including the development of a new grain terminal at Port Metro Vancouver, is expected to ease the bottleneck of moving grain to new markets, including Asia and the Middle East.

“We are currently looking at the feasibility of building a facility in North Vancouver on a piece of land that we feel is one of the best, and possibly last, deep-water port sites in Vancouver,” said Karl Gerrand, chief executive officer of G3. “If we are successful, it will be the first new grain terminal built in Canada since the late 1960s and a complete step change from the way things are currently done.”

 Plans for the terminal include a loop track with the capacity to have three 130-car unit trains on site at a time and to unload a unit train in less than six hours. The new terminal will increase efficiency, alleviate the current bottleneck and create capacity for third-party grain shipments to international markets such as Saudi Arabia.

To support the new terminal, G3 is planning to build six to eight inland terminals in Alberta and Saskatchewan. Locations have yet to be announced.

“Our target throughput for the new [Vancouver] facility will be six million tonnes per year. We expect to do four million tonnes ourselves, and the other two million will be available to other companies,” said Gerrand.

That additional capacity is music to the ears of Nicole Rogers of Agriprocity, a company that specializes in matching Canadian grain growers with contracts from processors in the Middle East. “For us, the G3 expansion means we’ll have an exit in Vancouver,” said Rogers. “With the new terminal, they’ll probably be more open to a longer-term handling agreement, something our buyers in the Gulf are looking for. The inland grain companies have no motivation to do that.

“What’s great about having a Gulf entity own bricks and mortar in Canada is that [its] focus is the exact same as [that of] our buyers,” added Rogers.

SALIC, the Saudi Agriculture & Livestock Investment Corporation, is a partner in G3, along with Bunge Canada. Owned by the Saudi government, SALIC invests in agricultural, livestock and associated value chains around the world to help improve food security.
“SALIC’s status as [a] shareholder comes with no obligation for our company to market grain to the Middle East. Having said that, the Middle East is an excellent consumer market for Canadian grain,” said Gerrand. “I don’t think Canada has been well positioned for that market until now, and I expect the opportunities will increase as a result of their investment.”

The opportunities are particularly strong for Canadian barley growers. Saudi Arabia is the largest barley importer in the world, importing 7.5 million tons of feed barley in 2014, according to the United States Department of Agriculture’s Foreign Agricultural Service.

“This is the No. 1 market in the world, and it’s all feed barley. The Canadian industry thinks it has to be a malt barley or specialty barley to export, but we have a huge opportunity to just sell barley that is functional for animal feed,” said Rogers, adding that the Saudi demand for barley is tied to the feed demands of Almarai Dairy, as well as a growing processing sector to serve the Gulf region.

“Growers apply different inputs to feed barley, so they might not have a higher price, but they can actually make a better margin,” she added.

Prairie grain farmers have been watching the transition closely, and are optimistic about G3’s entry into the Canadian grain market as well as the investments they are making, particularly in Western Canada.

“I think the opportunities are going to get better as time goes on,” said Gary Stanford, a director on the Alberta Wheat Commission, and president of the Grain Growers of Canada. “Saudi Arabia will have some real opportunities to start moving more Canadian grain that way, even feed grains.

“The new export terminal will create another opportunity to get more grain out of Western Canada, and the new terminals planned for Alberta means Alberta grain farmers will be able to capitalize on more markets as well as the equity that us farmers have put into CWB over the years,” he added.

**THIMET GETS SECOND LOOK**

**NEW RESEARCH OUT OF MONTANA**

State University (MSU) shows that Thimet, a pesticide previously banned in Canada, can be more effective at controlling wheat-destroying pests if applied differently.

Thimet, a product made by the Amvac Chemical Corporation, is an organophosphate pesticide that can be used to control wheat-stem sawfly infestations. The wasp-like insects destroy wheat stalks from the inside out.

David Weaver, a Canadian professor of entomology at MSU, is involved in the new Thimet research. He said that, based on his team’s findings, a grower can “boost the activity of Thimet by decreasing the time window that passes between when the product is taken up and when the wheat-stem sawfly adults infest the wheat.”

In May 2004, Health Canada’s Pest Management Regulatory Agency (PMRA) decided to phase out the sale and use of Thimet 15-G, “based on risks to birds, mammals and aquatic organisms from exposure to the granular product.”

The PMRA set a deadline of May 1, 2015, for the last sale of Thimet 15-G by distributors and retailers, and a deadline of Aug. 1, 2015, for its last use by growers. In Canada, Thimet 15-G was primarily used to reduce wireworm damage in potato crops, and the ban has left many potato growers scrambling to find alternatives for wireworm control.

“For most of the targeted pests, there were better products to use and, specifically, Thimet is an older organophosphate. It happens to be very systemic, which is why that activity works against wheat-stem sawfly larvae,” Weaver said. “It’s a restricted-use [product] because of [its] high oral, dermal and inhalation toxicity.”

The research Weaver is involved in shows that if Thimet is applied to crops post-emergence, one inch below the soil surface, the wheat stalks have enough time to take up the chemical and expel it by harvest. This can be accomplished within the legally established and labelled pre-harvest interval of 85 days or more.

Since Thimet 15-G was banned in Canada, Amvac has come out with a new formulation of the pesticide called Thimet 20-G. According to Weaver, the only difference is a higher concentration in the granules. Thimet 20-G allows farmers to apply at a rate of five pounds of product per acre, the existing legal tolerance for wheat. For large crop areas, the higher amount of active ingredient per pound is an asset to growers.

Weaver said historical Thimet trials might have also shown that the product may be successful in controlling wireworm and spiral nematodes, but more research will have to be done into the effects of this use. Due to the timing of activity of key wheat stem sawfly biological control agents, there is no evidence of any negative direct effects on parasitoids that attack large wheat-stem sawfly larvae.

A former graduate student at MSU who tested the product on his own wheat crops spurred the new look into the pesticide. Weaver explained that the effects of wheat-stem sawfly infestations are much more detrimental for growers in Montana than for those in Western Canada. On the Canadian Prairies, wheat stem sawfly numbers have declined since the early-2000s. The decline is likely the result of fluctuating weather patterns, growing natural enemy populations and the use of diverse crop rotations.

Amvac has submitted an application to the PMRA for Thimet 20-G to be approved for use in Canada, as well as an application for the reinstatement of Thimet 15-G. Grower groups, such as the Prince Edward Island Potato Board, support the reinstatement of Thimet 15-G.
THE CURRENT CANADIAN agricultural environment is filled with optimism and a new perspective of increased prosperity. However, Scott Horner, 2015/16 president of the Canadian Seed Trade Association (CSTA), said there’s still more to do.

“I think every president comes into their term thinking their year is an important one. I’m no different,” said Horner. “My goal for this year is to create tangible progress in improving the environment for investment and innovation in our industry so that significant value creation can occur for all stakeholders.”

With the privatization of the Canadian Wheat Board, improvements to Canada’s crop variety registration system, and the ratification and implementation of UPOV 91, the stage has been set to promote investment in research and the development of new seed varieties, thus ensuring that Canada stays internationally competitive. No doubt Horner will be a major player in continuing this momentum.

“Horner has a good understanding of the many moving parts of the seed industry,” said Peter Entz, the CSTA’s 2013/14 president. “His broad background of experience and his methodical way of thinking put him in good stead for any challenges that may arise.”

That background includes being born and raised on a farm near Creelman, SK, where Horner’s family raised Black Angus cattle and grew mostly cereal crops. After earning his bachelor of science in agriculture from the University of Saskatchewan, Horner went on to work with Zeneca Seeds, which later went global as Advanta Seeds.

Horner has appreciation for his time with Advanta, where he got to know seed growers and farmers from all corners of Western Canada. “It was a great start to my career as well as valued learning, insight and experience with Canadian agriculture. I developed a lot of great relationships [that] I still value today.”

In 2001, Horner came on as the third employee at HyTech Production Ltd., near Coaldale, and he is now part owner and general manager. Horner has managed the independent, contract seed-production company to its present state, with operations in Chile, southern Alberta, British Columbia and Washington. “I was looking for new challenges and the chance to play a greater role in a seed business. I saw an opportunity to help build a seed-production company that could become an industry leader and service western Canadian producers,” he explained.

Horner joined the CSTA’s board of directors in 2008 and now represents the association on the board of the Seed Association of the Americas (SAA). He’s also been chair of the SAA’s International Committee and Hybrid Canola Seed Production Subcommittee.

With all the forward motion in the seed industry, Horner will lead the CSTA to ensure that progress continues. As the variety registration system is modernized, many CSTA members will be actively monitoring and commenting on the new system to streamline the process and encourage efficiency and innovation.

One of the most anticipated initiatives this year has been the execution of UPOV 91. “There has already been recognition of the new environment we’re operating under now,” Horner pointed out. “The Plant Breeders’ Rights Office announced a 20 per cent increase in the number of applications since UPOV 91 came into effect. Breeders are seeing the benefits of having their varieties protected under UPOV 91.”

Other groundbreaking developments related to the implementation of UPOV 91 include Canterra Seeds’ joint venture with Limagrain on July 2 and minister Gerry Ritz’s July 8 announcement of collaboration between Agriculture and Agri-Food Canada, Canterra Seeds and the Alberta Wheat Commission. These initiatives highlight the importance of public-private-producer investment to Canada’s future.

Still, Horner looks forward to even more industry success. “As an association, we’re focused on ensuring a favourable environment, regulatory support and intellectual property protection to encourage investment, innovation and development.”
ID, PLEASE
IDENTIFYING MALT VARIETIES USING GENETIC MARKERS

DEVELOPING PROTEIN PROFILES
is a common way to distinguish malting barley varieties. However, it is not always the most efficient method. Aaron Beattie, PhD, an assistant professor at the University of Saskatchewan and a barley breeder at its Crop Development Centre, is leading a project to develop a new, more efficient way to identify and distinguish malting barley varieties.

Since April 2014, Beattie and his team have been developing a SNP (single-nucleotide polymorphism; pronounced “snip”) marker technology that quickly, efficiently and effectively identifies malting barley varieties. In a nutshell, Beattie’s research differentiates one barley variety from another by finding one key difference in its genetic makeup.

“SNP markers are differences within the DNA sequence between different variants of barley,” explained Beattie. “In this project, we’re interested in identifying any kind of difference in the DNA sequence between the barley varieties.”

The project began with Beattie and his team collecting pure seed of malting barley varieties from breeders and companies representing them. Part of the varieties’ genome was sequenced, and the main scientist on the project, Tajinder Grewal, began working his way through the data to identify SNPs specific to each malting barley variety. There will always be one SNP marker that is unique to each variety, making differentiation easy.

“You could think of this as a Human Genome Project for barley,” said Beattie. “In that project, they’re looking at genetic differences between people. We’re doing the same thing in barley, although only analyzing a portion of the genome rather than the whole barley genome.”

This works much like a naming system. The hope is that a unique SNP marker will be identified for all—or as many as possible—of the 10 malting barley varieties on the Canadian Malting Barley Technical Centre’s list of recommended malting barley varieties.

According to Beattie, the ultimate goal of the project is quality assurance. “Canada has a reputation for high-quality barley, and this ties into maintaining that high-quality standard that we have,” said Beattie. “I think if both the customers in Canada and the farmers in Canada have more confidence in what they’re buying and selling from one another, it will make the whole system work a little bit smoother.”

Todd Hyra, business manager of SeCan Western Canada, is also enthusiastic about what the research means for the Canadian barley industry.

“The faster and more efficiently we can identify and distinguish products in grain cargos, the better off our industry overall is,” said Hyra. “When our customers get a better product because we’ve got a system that’s backed by an efficient measurement system, such as the SNP markers, it helps the barley industry and it trickles down to us at the seed level.”

Hyra added that, if the research lowers costs and allows for more tests to be done in a more efficient manner, it helps the industry at a breeding level as well as at a commercial level.

Beattie and his team have successfully identified SNP markers for three barley varieties—markers for CDC Copeland and CDC Meredith have been already been identified—and he says the team is close to uncovering three more. Until the project comes to a close in 2017, the team will continue to work its way through the list of 10 common malting barley varieties outlined by the Canadian Malting Barley Technical Centre.

But the work won’t be done then. “Even beyond the project, this kind of research is something that would need to continue, because as new varieties of barley are developed, you need to make sure the markers you have still differentiate the variety you think it is from anything new,” said Beattie. “It’s an ongoing process.”
CHEMICAL BURN
MONSANTO’S BID TO ACQUIRE SYNGENTA FAILS TO MATERIALIZE

Monsanto will have to go back to the drawing board after it received a final refusal from Switzerland-based Syngenta as harvest began.

The proposed $45-billion takeover bid of Syngenta made big waves in the industry. However, there have been few ripples since, as Syngenta wouldn’t budge on the idea of a merger.

In May, Monsanto announced its intentions but its number was rebuffed as an underwhelming valuation. Monsanto, the world’s largest seed seller, was trying to acquire Syngenta, the world’s largest provider of crop protection chemicals. As insurance, Monsanto also offered $2 billion—later upped to $3 billion—in compensation for a reverse breakup fee if a deal were to fail regulatory hurdles.

“We were interested in the deal, but not at any cost,” said Trish Jordan, Monsanto Canada’s public and industry affairs director. “We were focused on the right deal at the right price and that doesn’t seem possible with their response.”

Jordan said industry consolidation is normal, but life sciences remains an area where companies aren’t too keen on joining forces.

“There seems to be a natural benefit in creating linkages within some of the companies that exist. We’re always looking for ways to strengthen our company.”

Syngenta publicly stated Monsanto failed on four key fronts, including Monsanto’s estimate of total cost and revenue synergies and its assumptions regarding net sales proceeds and traits.

“Our Board is confident that Syngenta’s long-term prospects remain very attractive with a leading portfolio and a promising pipeline of new products and technologies,” said Syngenta chairman Michel Demaré, in an official release.

Monsanto tried dutifully to entice Syngenta for an acquisition and tried to allay concerns over antitrust by publishing a white paper with the help of four major law firms. Monsanto intended to divest itself of Syngenta’s entire seed and trait business, including vegetables.

NO RELIEF FOR TFWs

BY SCOTT ROLLANS

PRODUCERS AND PROCESSORS hoping for better access to temporary foreign workers instead got a July 6 media release from the federal government outlining stiff new penalties for employers who break the rules of the Temporary Foreign Worker Program (TFWP) and the International Mobility Program.

Rick Paskal, whose Lethbridge-area cattle operation was featured in the Spring 2015 issue of GrainsWest, now sees little future for the TFWP in the agriculture sector. “I’m pretty sure the program is done,” he said flatly.

Paskal’s chief complaints include the non-refundable fee (introduced mid-2013) now required for each Labour Market Impact Assessment, and restrictions on the length of time workers can stay. “You can’t expect people to move for a one- or two-year commitment—to sell everything they have in their country of origin—and have no certainty as to what their future’s going to be.”

At the same time, grains and oilseeds are not included on the national commodities list, and these industries can’t access seasonal workers under the TFWP. A few limited pathways to permanency still exist for agriculture and agri-food foreign workers, according to a June report prepared by the Canadian Agricultural Human Resource Council (CAHRC). But general farm workers, classified as “lower-skilled,” no longer qualify for the provincial nominee program.

Of course, lower-skilled help also happens to be an area of critical need. According to the CAHRC, there are currently more than 1,000 vacant positions in the value-added meat industry alone.

The CAHRC is eager to work with industry and government to find solutions, said executive director Portia MacDonald-Dewhirst. “There are 64 organizations and associations from across Canada, and across all the commodity areas, that are speaking with one voice and clarifying that this industry is struggling and needs support.”

MacDonald-Dewhirst is taking part in an October 20 “Agriculture Labour Summit” in Red Deer (laboursummit.albertamilk.com), where panelists and registrants will discuss issues surrounding recruitment and retention. The CAHRC is also hosting its own summit next March, in Winnipeg.

“The shortages are here now,” said MacDonald-Dewhirst. “We already have a problem. What are we going to have in five years?”
What’s in Your Glovebox?

As farmers, we all have our “can’t-live-withouts,” and—no surprise—they’re often found in the glovebox. In this issue, we asked Magnus von Rennenkampff, a grain farmer from Westlock, to open up his glovebox. Here’s what we found:

1. Safety glasses, 2. Dust mask, 3. Seeding depth gauge (used to check seed depth while seeding), 4. Pocket knife, 5. Soil sample bag (used to collect soil samples that will be sent away for nutrient analysis), 6. Calculator, 7. Matches, 8. Block heater timer (used to set your vehicle block heater on a timer rather than have it running constantly), 9. Paint marker, 10. Play-Doh, 11. 30-06 rifle ammunition casing, 12. Tape measure, 13. Coolant tester/hydrometer (used to test vehicle coolant to ensure it is mixed at the proper ratio)

What is it?

Each issue, GrainsWest will show you a close-up view of an ag-related image and it’s up to you to correctly identify it. Email your winning answer to contests@grainswest.com for your chance to win a prize, awarded to one randomly selected contest entrant who answered correctly. Then, watch for the next issue, where we will reveal the full image and have a new one to keep you guessing.

Do you have a glovebox that you would like GrainsWest to peek inside? Or a farm image that would make readers say “What is it?” If so, send us the picture and drop us a line: info@grainswest.com

This issue’s image

Last issue’s image

Congratulations to grain farmer Terry Zacharko of Bruderheim. Terry has won a prize pack courtesy of Alberta Barley and the Alberta Wheat Commission for correctly identifying last issue’s image as hydraulic couplings of a John Deere loader.
Fall 2015 GrainsWest

Person: Medhat Nasr, provincial apiculturist
Place: Crop Diversification Centre North in Edmonton
Thing: Enforcing regulations in Alberta’s bee industry, maintaining bee health and researching issues that arise
Alberta’s chief apiculturist examines province’s perennial pollinators

BY ALEXIS KIENLEN • PHOTOGRAPHY BY RYAN JACKSON

MEDHAT NASR HAS BEEN FASCINATED BY INSECTS SINCE HE WAS A BOY, GROWING UP NEAR THE PYRAMIDS OF GIZA. He majored in entomology while pursuing his undergraduate degree at Cairo University. Honeybees interested him because of their unique social structure and their role in crop pollination. Nasr chose to focus his master’s degree on honeybees, and his head has been filled with bees ever since.

He left his homeland of Egypt to complete his doctorate at the University of California, Davis, and, in 1990, he moved to Guelph, ON, with the mission of breeding honeybees that were resistant to tracheal mites. He worked at the University of Guelph for three years and then at the Ontario Beekeepers’ Association as a technology transfer specialist. His position represented one of the first times in North America that the beekeeping industry and researchers had collaborated on a research program. In 2000, Nasr was recruited by Rutgers University—New Brunswick, New Jersey, to spearhead a bee-health program.

Nasr took the position of provincial apiculturist with Alberta Agriculture in 2002. Since then, his guidance and leadership have improved bee health in Alberta, and he has established several new bee-related initiatives within the province.

GrainsWest: What does the provincial apiculturist do?
MN: The position itself involves mainly regulatory and extension work. In Alberta, similar to any province or country, we have the Bee Act and Bee Regulation, which protect the industry from the spread of diseases and maintain surveillance to ensure disease containment. The Act helps beekeepers apply biosecurity to keep healthy bees. The provincial apiculturist also does extension work to educate beekeepers about new technologies and how to apply them. Because of my qualifications as a researcher, I also do applied research. Before I was hired, there were no bee scientists in Alberta Agriculture. Being able to do research has been advantageous, because it allows us to react quickly to problems that arise.

GW: Can you give us a basic overview of Alberta’s bee industry?
MN: Alberta is a large honey producer. We have about 285,000 hives, about 43 per cent of the bees in Canada. Our industry is mostly commercial. Ninety-five per cent of the bees are managed by about 120 commercial beekeepers, each with about 2,250 hives. The highest concentration of bees in the province is north of Red Deer to Athabasca and the Westlock area. That area has almost 125,000 hives. Between Calgary and Red Deer, there are about 25,000 hives, and south of Calgary, about 75,000 hives. The Peace River area has about 60,000 hives. There are about 950 registered beekeepers in the province.

GW: What can farmers do to help beekeepers maintain bee health?
MN: Farmers and beekeepers rely on each other. Beekeepers rely on farmers to provide land. Farmers get a free service of pollination, and beekeepers get honey. Alberta has the largest number of colonies in Canada that are moved for pollination. About 75,000 hives are moved to Lethbridge, Medicine Hat and the Calgary area for hybrid canola-seed production. That industry contributes about $650 million to Alberta’s economy.

Since those farmers rely on honeybees for pollination, they have to take care of the bees by using best management practices on their crops. When farmers use pesticides, they need to follow the labels to make sure they are applied safely and don’t kill the bees. Both parties need to communicate. Farmers need to tell beekeepers when they are going to be applying pesticides so that beekeepers can move their bees if needed.

In Alberta, we have been quite successful working with both farmers and beekeepers to make sure they understand each other’s needs. Once in a while, bees do die from pesticides, and we investigate. If we find that pesticides have been used improperly, there are ways to mitigate this problem. We rely on communication, and if there’s a problem, we talk with the farmers about how to remedy the situation.

GW: What kinds of challenges has Alberta’s bee industry faced?
MN: Varroa mites made it to Alberta in 1990. Varroa are external parasitic mites that suck the blood of honeybees, leaving them compromised and prone to infection. Initially, beekeepers learned how to manage mites with reliance on miticides. Unfortunately, the mites developed resistance to the chemicals.
When I came here in 2002, we had to find a new way to control mites. We switched to a product called CheckMite. By 2006, the mites had developed resistance to it, and Alberta beekeepers lost 44 per cent of their bees. This coincided with worldwide colony collapse disorder, which Alberta never had.

We didn't have a product available to replace CheckMite. We had access to several other products, which were mostly organic products like formic acid and oxalic acid. These products were only effective in temperatures ranging from 15 to 25°C, and oxalic acid could only be applied late in the fall when there was no brood. All of these products only worked under certain weather conditions, so they had variable efficacy, which was problematic.

In 2007, I worked with the Pest Management Regulatory Agency to register Apivar, a product from France, in Canada. It took us about a year and a half to prove that Apivar was safe for use and wouldn't affect the quality of honey. By the fall of 2008, we got the product registered for use with a special permit. At the time, I was a member of the Canadian Association of Professional Apiculturists and chair of its chemical committee, so I spearheaded a program to register the product across Canada.

GW: How are the bees doing now?
MN: It took a couple years for beekeepers to learn how to apply the product properly and find out the most effective time to apply it to bee hives. Through our research and followup programs, we were able to recommend best management practices.

With the support of the Alberta Crop Industry Development Fund, we created a proactive beekeeping program in 2009. Beekeepers believed that the chemicals they were applying in the hives worked, but they had never monitored the results or the development of resistance. The proactive bee-health program we developed was initially for Alberta, but other provinces soon began to copy the program, which was based on a preventive model. Beekeepers had to monitor their hives for any pathogens or parasites, and we established thresholds for parasites. When parasites reached the thresholds, beekeepers treated their hives right away.

We established an integrated pest management system for honeybees. A team of about 15 people worked with the beekeepers, helping them monitor and interpret the results so they could make their own decisions about whether or not to treat. Mostly, we tried to encourage people to use products other than Apivar, so that resistance would take longer to develop.

Beekeepers saw how things changed in their operations by monitoring and treating properly. This program was so effective that, by 2011, our winterkill went down by half. From 2011 to now, our winterkill is averaging 18 per cent, which is close to the long-term expected winter losses by beekeepers. During part of this period, beekeepers can’t treat the bees because the hive is wrapped for the winter. This year, because the winter was mild, we had one of the lowest levels of winterkill in the last 20 years: 10.6 per cent.

GW: Are beekeepers dealing with any diseases or parasites other than varroa mites right now?
MN: The other challenge is nosema, a fungus that grows inside bees’ guts, which gives them diarrhea and dehydrates them. There are about 20,000 bees in the winter and about 60,000 bees in the summer. Healthy bees don’t defecate inside hives, but when bees get sick with nosema, they do. The younger bees clean up the fecal matter, ingest the spores and re-infect themselves.

The disease affects the bees from December until about May. For part of this period, beekeepers can’t treat the bees because the hives are covered. We’re trying to figure out the best timing to protect the bees from nosema. Beekeepers used to feed medication to their bees in the fall so the medication would be available in the winter, but our research has shown that treating the bees for nosema in the spring is more effective, because it reduces the level of spores in the bees, and fewer spores build up during the winter. We’re trying to limit the damage, get a better understanding of the disease and reduce the change of infestation.

GW: What are some major areas of research in the province?
MN: One of the major concerns we have is sustainability. If Apivar quits working because of resistance, do we have an alternative for it? This is one of the issues that keep us awake at night. Most of my research right now involves screening miticides to find new ones that could replace the ones we’re using right now.
The importance of crop-specific dynamics in a drought year

The 2014/15 growing season has been one of the most challenging in recent years. Each crop year inevitably has pockets that see challenging conditions, but it’s been a while since we’ve seen widespread dryness on the level experienced this year.

The hardest marketing decisions in a drought year are those prior to harvest, when great prices and selling opportunities need to be weighed against the risk of yields not being there to meet obligations. That said, even when a crop is in the bin, it’s not easy to know when the timing is right to make sales.

The single most important thing growers can do in making marketing decisions is to fully understand the market structure and outlook from a global perspective for each crop they grow. The impact of an overall decreased Prairie production will vary considerably by crop. Poor local yields don’t automatically mean prices will continue to increase for the rest of the year. Canada’s relative importance on the world stage in each crop, and the ability for end users to find alternate sources or substitute ingredients, will greatly affect values going forward.

A good example of this is the market for durum. Canada is the world’s dominant exporter of durum, which is why crop values rose considerably during the summer when it became clear that our crop would fall far short of initial expectations. High prices also have the effect of forcing end users to source as much as possible from other countries and to look to either lower-quality, cheaper stocks or substitute crops wherever possible. World production can be expected to increase in the longer term as farmers respond to high prices. This will affect prices, both in the shorter and longer term, in a market that can be extremely volatile at the best of times.

Canada is just one of many major exporters of wheat. Our smaller crop has only a marginal effect on global prices, given the large overall supply. However, basis levels appreciated sharply in the summer. Part of this was the effect of the Canadian dollar, but an important component was also the market doing its job of allocating our smaller inventories to those buyers that specifically wanted Canadian wheat. In other words, outright prices remain at the mercy of world fundamentals, but basis levels help cushion the declines. Longer-term price direction will primarily be a function of global dynamics.

For feed barley, it is important to watch domestic signals, since most of it is consumed at home. However, as a feed grain, it is also more easily substitutable. Prices will likely stay relatively firm, given how short supplies will be all year, but the ceiling is also set by the cost of feed wheat, dried distillers grains and imported corn. Conversely, malt barley is more heavily impacted by quality than yield. Even in a year of very low barley production, malt demand consumes less than one-third of total production.

Crop-specific dynamics will also drive the prices and outlook for every other market, including canola, pulses and other specialty crops.

It should also be noted that markets are generally quite efficient. A smaller Prairie crop has been anticipated since conditions started becoming increasingly dire in early summer, and users responded by trying to build some early coverage. It is not uncommon in supply-short markets for prices to peak early in the crop year, and then spend much of the winter and spring drifting along within a relatively narrow range. This will vary by crop, but there will inevitably be buyers caught short and forced to offer premiums to get the coverage they need. While a structural move higher over the coming months is not impossible, it also shouldn’t be assumed unless we start to see some widespread production concerns in other major growing regions of the world into the winter and next spring.

Jon Driedger is a senior market analyst with Farmlink Marketing Solutions.

Outright prices remain at the mercy of world fundamentals, but basis levels help cushion the declines.
SIGNS YOU LIVE IN A BRAVE NEW WORLD

UAV IS AN ABBREVIATION FOR unmanned aerial vehicle. Some people call them drones, some people call them toys, but whatever we call them, it is clear that they are serious business. But what are they?

The UAVs being used today are advanced-technology packages that use strong battery packs to stay aloft long enough to capture high-resolution images with multiple sensor arrays. The on-board computers make sure that the flight paths are exact, similar to automatic steering for tractors. So, they are essentially flying robots that take pictures of crops on demand—welcome to the future!

Today, most farm imagery is sourced from satellites owned by governments or large corporations. Satellite imagery is powerful, and it has allowed agricultural professionals to push the boundaries of precision production practices. But satellites have drawbacks, namely:

1. Expense: Building and launching a satellite to orbit the earth from space is expensive and takes years of planning.
2. Upgrades: Changing out sensor or camera equipment is nearly impossible. While software can be updated remotely, hardware can only be updated by space shuttle.
3. Clouds: Anything that gets between the satellite and Earth degrades the image.
4. Schedule: Satellites fly on a predetermined schedule and a set path that are difficult to change. This makes it challenging if an image is needed right away.

These four primary weaknesses of satellite technology have created the opportunity for UAVs and continue to drive the growth in UAV use in agriculture. UAVs have many strengths that directly offset the weaknesses of satellites:

1. Expense: UAVs are far less expensive compared to satellites, and with prices beginning to drop due to larger production quantities, farms can now easily afford UAV technology.
2. Upgrades: Changing a camera or sensor package on a UAV can be done anytime in a farm workshop. The sensor packages are typically housed in cases that are easily swapped out in minutes.

3. Clouds: The simple advantage of being able to fly below clouds means that an image can be captured with much more predictability. While bad weather can still prevent a UAV from flying, the chances of getting a high-quality image are much higher.

4. Schedule: UAVs fly at your command, with no waiting, and any area that may need further investigation can easily be flown over again.

All of these strengths boil down to one word: control.

As we use imagery more and more to drive in-season production decisions, we are creating a new dependency. And crops don’t wait. Clouds or no clouds, we need to be able to understand what is happening in real time to react appropriately and maximize yields.

On top of these questions, there is one final issue that deserves mention: data control.

Satellite data flows through the government agency or corporation that owns the satellite. It is then processed by computers and made available for use. While this can sometimes happen in a matter of hours, it still represents a delay in the process.

UAVs, on the other hand, capture and download processed data much faster—in many cases almost instantly. This allows for faster decision-making and an enhanced ability to correct problems.

UAVs allow for control. Control of timing. Control of sensor technology. Control of data. This control is the primary justification for UAV use. Quite simply, if time is of the essence, then you don’t want to wait on a satellite. But like all things, achieving a higher level of control will cost you more money. That confuses some people because the UAV hardware is so much cheaper than satellite hardware. But the satellite images are resold many times over to multiple customers, which lowers the imagery cost on a per-acre basis to below the cost of UAV images. So owning a UAV, or paying someone to fly one over your farm, is still more expensive than ordering satellite imagery of your fields.

Read our next issue to see what it takes to make imagery pay off, and we’ll look at the question of why you would pay someone to take pictures of your fields! 📸

Benjamin Allen serves as the Chief Revenue Officer for Agri-Trend® and Agri-Data® where he focuses on helping customers use technology to produce safe food profitably.

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2) Weighs between 2.1 kg and 25 kg and you can meet the safety conditions in the Transport Canada exemption for UAVs that weigh between 2.1 kg and 25 kg, you don’t need permission to fly.

Go to: tc.gc.ca/eng/civilaviation/standards/standards-4179.html for more information.
Oneil Carlier’s journey to MLA and Minister of Agriculture and Forestry

BY TREVOR BACQUE • PHOTOS COURTESY OF GOVERNMENT OF ALBERTA

The son of a farmer in Val Marie, SK, Oneil Carlier, Alberta’s newest minister of agriculture and forestry, has led an interesting life. His rural upbringing included inoculating cattle, helping at harvest and riding tractors, while his spare time was spent swimming in irrigation ditches and making occasional visits to the “big city”—Swift Current.

Throughout his childhood on his family’s mixed farm, Carlier’s life revolved around his family and friends. The word “teamwork” became a hallmark of his outlook on life.

“It’s people looking after people,” said Carlier, 53. “I’ve always taken that through my labour union work. You could say that not just for labour—if you have an organization, whether it’s marketing in farming or industry, if you do it collectively, you’ll have a better chance.”

He means it, too. Carlier spent 13 years working at Public Service Alliance of Canada (PSAC) as a regional representative for the Prairies, from 2002 to 2015. PSAC is one of the largest labour unions in the country, with an estimated 170,000 members. While he worked at PSAC, Carlier liaised with groups such as Revenue Canada, the Canadian Food Inspection Agency and the federal government.

Prior to working at PSAC, Carlier spent 20 years at Agriculture and Agri-Food Canada as a geotechnical technician, from 1982 to 2002. There, he embraced his “first love” of irrigation. Memorable work involved the rehabilitation of the Bassano Dam and quality control at Crawling Valley.

A shift into politics wasn’t necessarily on his radar, but he has always been in the political mix. “I had been involved in Saskatchewan with the NDP helping on various campaigns and advocating for certain issues,” said Carlier. “I moved to Alberta and was active still. Saskatchewan had a more active party structure, but I realized Alberta was just as active and vibrant.”

So, onto the ballot he went: Carlier, Oneil—New Democratic Party. Carlier’s party was drawing low numbers for provincial
support, and it looked like another NDP election exercise: collect the bronze medal, regroup, repeat. However, Carlier saw his odds improve during the abridged election campaign triggered by then-premier Jim Prentice. A now-infamous remark that “math is difficult,” made by Prentice to Rachel Notley during the televised leaders’ debate, gave the NDP a jump in the polls, and it never looked back.

“I knew about halfway through that I had an extremely good chance of winning and doing well,” admitted Carlier. “It was a pleasant surprise. We worked very hard with our volunteers, our leader and [our] now-premier.”

The numbers show that his confidence was not misplaced. He rode to victory with 36 per cent of the vote, or 5,472 votes, in his riding of Whitecourt-Ste. Anne. That tally is 875 more votes than the NDP garnered in the northeast constituency in the last six elections combined, dating back to 1993. Similar upsets occurred provincewide, and the NDP toppled the Tories with a 54-seat majority government, reducing the incumbents to a mere nine seats.

Now, as he works to establish himself in a portfolio with more interest groups than grains of sand on a beach, Carlier has been busy shaking hands and having coffees. “I’m still meeting different stakeholders. Not even second meetings. Just new stakeholders,” he said. The minister admitted that his strong suit lies in agriculture, not so much the newly minted “F” of forestry under his ministerial bailiwick, but his staff has been helpful in getting him up to speed.

If one measure can be expected to have a lasting impact in the agricultural world, it’s the introduction of new measures to protect Alberta’s farm workers, in the form of occupational health and safety (OHS) regulations. “It’s going to happen,” he said, adding that consultations have been ongoing almost since he took office. “For the most part, people are not only realizing this is going to happen; they are looking forward to it, because it’s the right thing to do.”

Alberta is the last Canadian holdout when it comes to on-farm OHS provisions. The PCs started the work during their final term, but the NDP will see it through. The regulations are helpful in international trade agreements as well, and Carlier sees that legislation as a key to entice other countries’ governments to continue or even develop new relations with Canada and Alberta.

It’s a simple 1, 2, 3 for Carlier for market priorities: the United States, China and then Japan.

The biggest elephant in the room—the Trans-Pacific Partnership, or TPP—is something that we cannot miss out on, according to Carlier. “I think for us not to be at [the] TPP [or] not to sign on would be very detrimental, especially to grains,” he said, adding that supply-managed farms need to be protected, something that’s been echoed at the federal level by politicians of all stripes.

Regardless of the TPP, OHS or any other ag-cronyms that come his way, the minister is committed to the value and importance of rural life. “Ag is the backbone of Alberta,” he said. “It’s a part of our social being, of our government, of myself, and it remains important for our economy and rural economy.”

NEW BLOOD: Oneil Carlier is sworn in as the new minister of agriculture and forestry in Edmonton on May 24, 2015.
For modern farmers and agribusiness, sustainability is the name of the game

BY TYLER DIFLEY • PHOTOGRAPHY COURTESY OF BASF SE AND MCDONALD’S CANADA

SUSTAINABILITY MEANS A LOT of things to a lot of people, and coming up with a one-size-fits-all definition is a nearly impossible task. Despite this inability to pinpoint the word’s meaning, it has become a crucial part of modern agriculture. With each passing year, sustainability also becomes more important to consumers, whose calls for products that are verifiably sustainable are becoming too loud to ignore. As a result, countless companies big and small that work with farmers and agricultural products on a day-to-day basis have committed to sustainability—for their customers, for their consciences and even for their bottom lines.

One of these companies is multinational chemical juggernaut BASF—a familiar face for many farmers who use their crop-protection products season to season. As a company that interacts with farmers on a daily basis and equips them with tools vital to their livelihood, BASF has an important role to play in on-farm sustainability.

“Our firm conviction is that farming is the most important or the biggest job on earth,” said Ron Kehler, business director of crop protection for BASF Canada. “So we’re trying to develop tools that help them farm sustainably.”

For BASF, one of the most significant contributions the company can make to sustainable agriculture comes from research and development, yielding new technologies and products that help farmers achieve higher yields with fewer resources.

“We’ve been bringing innovative products for crop production to the market for many years,” Kehler said. “We see that those tools are helping farmers get the most yield and the best quality off of every acre.

“That’s a pretty foundational principle to how we look at sustainability—making sure we’re not using more acres to feed the world, but we’re using the acres we have more effectively and in a way that they’ll be there to produce food for the next generations.”

Global fast-food giant McDonald’s has also started to focus on sustainability in its operations, the most recent example being its sustainable beef pilot project. As part of the project, McDonald’s Canada has partnered with several Canadian beef producers to assess and verify the sustainability of their operations. More than 30 on-farm verifications have already been completed, and McDonald’s Canada hopes to verify close to 300 producers through third-party verifier Where Food Comes From by the time the pilot project wraps up in April 2016.

The pilot project was conceived as a response to the demands from McDonald’s customers for more information about their food and whether it is sustainable.

“For the first and foremost, it’s important to us because it’s important to our consumers,” said Jeff Fitzpatrick-Stilwell, senior manager of sustainability for McDonald’s Canada. “Our consumers want safe, high-quality and sustainably sourced food. We’ve been really good about being able to talk to them about the safety and high quality, and now we’re trying to be able to do the same thing around sustainability.”

For McDonald’s, the sustainable beef pilot project is only the beginning, and the company hopes to continue growing the amount of sustainable beef it can source not only in Canada, but globally. The commitment to sustainability doesn’t end with beef either.

“Our aspirational goal is really to be sourcing everything—whether it’s toys, packaging, beef or ingredients like palm oil that go into other items—in a responsible and verified sustainable manner,” Fitzpatrick-Stilwell said. In step with this goal, McDonald’s Canada announced in September that its restaurants would transition to using 100 per cent Canadian cage-free eggs over the next 10 years.

Consumer demand has been the impetus for many of the sustainability initiatives that are happening in the industry. However, proving that a particular product or production process is sustainable is easier said than done, especially when definitions of the term vary so drastically. This can put companies like BASF in a challenging situation.

“Our consumers want safe, high-quality and sustainably sourced food.”
–Jeff Fitzpatrick-Stilwell
FOOD FOR THOUGHT: McDonald’s Canada plans to verify roughly 300 beef producers as sustainable by April 2016.

“I think this is a difficult challenge for our industry,” Kehler said. “When a consumer says they want to make sure their food is produced sustainably, they don’t really know what it means. People think they know what it means, but when they have to put words around it, they have a hard time articulating it.

“I like to think that sustainable farming and modern agriculture are basically the same thing—getting more food from every acre. The more we can change the perception that sustainable farming is something other than that is really helpful.”

In the absence of a hard-and-fast vision of sustainability, companies are ramping up their outreach campaigns in an attempt to bridge the information gap between producers, industry and consumers.

“Consumers want to make sure that their food is being produced sustainably, so I think we need to help inform them and provide information that gives them confidence that it is being grown sustainably,” Kehler said. “That’s a job that we as an industry member, as well as our customers, share together.”

According to Fitzpatrick-Stilwell, widespread interest in sustainability and product sourcing will be the new norm going forward. As a result, all members of the food supply chain will have to work together for Canadian agriculture to put its best, most sustainable face forward.

“This is obviously where retail and food service are going on a macro level,” he said. “Our consumers are more and more interested in where their food comes from.

“All producers are eventually going to have to work with the retail end to figure out how to credibly tell the positive story that exists for Canadian agriculture.”

Even if producers do want to tell the positive story of Canadian agriculture to consumers, they often lack data or other proof to demonstrate that their on-farm practices are sustainable.

“We think there’s a need in the market for farmers to have ways to talk about sustainable farming,” Kehler said. “We want to make sure that our farmers and our staff have the tools to talk about sustainable farming with the people they interact with. I think we’re just missing the language to talk about this good work that we’re doing.”

A new tool has debuted that could provide the valuable sustainability metrics Canadian farmers need in order to communicate effectively with consumers and the food production value chain. The Canadian Field Print Calculator has finished beta testing and a number of pilot projects are set to begin this fall. The calculator was the product of a partnership that includes Pulse Canada, Grain Farmers of Ontario, the Canadian Canola Growers Association and CropLife Canada, among others.

“We have a group of organizations and companies in Canada that have been working together to respond to what we felt was kind of a growing demand for either sustainable products or information related to the sustainability of Canadian crops,” said Denis Tremorin, director of sustainability at Pulse Canada and the driving force behind the calculator’s development. “We’ve had about 40 producers participate in that process and we have 120,000 acres worth of data from 500 fields.”

To use the calculator, farmers input information about their farm practices, soil and climate, including details about the equipment they are using, their location and time for field operations. This information is used to determine the sustainability of an individual crop based on five indicators: land use efficiency, soil erosion risk, energy use, climate impact and soil carbon release. The calculator produces reports of field-by-field performance that farmers can analyze and compare against their peers.
“It’s a learning exercise more than anything,” Tremorin said. “To find out what practices are providing the best outcomes in terms of sustainability and efficiency.”

When we think about sustainability in a corporate context, it is sometimes imagined as a necessary evil for companies whose primary concern is their bottom line. This is not the case, according to Kehler.

“Some perceptions of sustainability are that it is counter to profit. I think if we look at what sustainability means, one of the three principles that are used internationally is that it needs to make economic sense,” Kehler said. “I don’t think that sustainability and economics should be in conflict. In fact, I think they more often go hand in hand.”

If subscribing to sustainable agriculture can be economically feasible for companies like BASF and McDonald’s, it’s a no-brainer from their perspective. But what do farmers and ranchers stand to gain when initiatives like the sustainable beef pilot project and the Canadian Field Print Calculator are completely voluntary and offer no monetary incentive for participation?

In the case of the calculator, Tremorin believes the value for farmers will come from the chance to compare themselves to their peers and find out how they stack up based on the sustainability indicators.

“There’s an interest among farmers in getting value for this in terms of money, but that’s not what the food companies are talking about for the most part,” Tremorin said. “They’re looking at their established supply chains and their established products that they buy and they’re trying to prove that those things are sustainable. They don’t want to pay more for what they’re already buying.

“We’re taking the stance that the value’s going to be in this kind of analytical approach, having growers compare themselves to their neighbours with real data, and that doesn’t happen very often out there.”

“We think there’s a need in the market for farmers to have ways to talk about sustainable farming”

—Ron Kehler

FARM TO TABLE: Farmers need ways to communicate with consumers about sustainable agriculture, according to BASF Canada’s Ron Kehler.
Pollinator polemics

Bee health and the neonics debate in Alberta and Ontario

BY CULLEN BIRD • PHOTOGRAPHY BY RYAN JACKSON
T WAS THE MORNING OF APRIL 18, 2012, WHEN Davis Bryans, owner of Munro Honey, was told something was wrong with one of his bee yards in Sarnia, ON. A few hours earlier the bees had been busily foraging, but now there was a pile of them sprawled on the ground in front of the hives.

Some were twitching. Others were already dead. Across the road, a farmer had been planting corn.

Bryans called Health Canada’s Pest Management Regulatory Agency (PMRA), which is responsible for pesticide regulation in Canada. The PMRA sent investigators to gather samples of the dead bees for analysis.

Other beekeepers began reporting similar incidents. By the end of the spring of 2012, the PMRA had investigated 240 reports of honeybee deaths, involving 40 beekeepers in Ontario. Ontario is the second-largest producer of honey in Canada, after Alberta.

In a 2013 report, the PMRA concluded that 70 per cent of the dead bees showed neonicotinoid residues. Neonicotinoids are a group of widely used pesticides, commonly used to treat crop seeds to protect against pest insects. The PMRA concluded that the bees’ exposure to neonic dust during the planting season “contributed to bee mortalities in 2012 and 2013.”

In 2012, the spring planting of crops in Ontario and the start of foraging season for honeybees were nearly simultaneous. In southern Ontario, farmers were planting neonic-coated corn and soybean seeds, raising clouds of dust from the treated seeds in the process. This neonic-contaminated dust drifted among foraging honeybees like those at Munro Honey.

For Bryans, and for many other Ontario beekeepers who now support a neonics reduction, the PMRA report was the equivalent of a lightbulb turning on. Bryans said he had watched his business fall from a high of 3,500 hives before 2007 to a struggling 2,500 hives in 2014, and he couldn’t account for it. Neonics exposure provided an answer.

In its report, the PMRA recommended industry changes to minimize “fugitive dust” during planting. Life sciences company Bayer CropScience responded with an improved seed lubricant, and the farm equipment industry has likewise taken steps to reduce crop dust. These changes have resulted in a steep decline in bee poisoning incidents during planting season—a change of 80 per cent from spring 2013 to spring 2015. The number of bee yards reporting incidents throughout the growing year has also declined, from a high of 395 in 2013 to 323 in 2014.

Yet these measures have not satisfied Bryans and other
activists convinced that neonics pose a more insidious threat to pollinator health through a pervasive presence in crops, soil and water. It’s a view not widely shared in Alberta, where the beekeeping profession is thriving and the agriculture industry is king.

A CACOPHONY OF VOICES
The neonics debate in Canada has developed a sense of urgency. For the past five years, Ontario has had bee losses of more than 30 per cent each winter. A survey by the Canadian Association of Professional Apiculturists reported after this past winter that 38 per cent of Ontario’s hives were dead or unproductive, down from a record 58 per cent loss after the harsh winter of 2013.

An “acceptable” winter loss is judged to be 15 per cent or less. By comparison, Alberta’s winter losses were 11 per cent in 2014, down from about 19 per cent the year before.

In late March this year, the Ontario government released draft legislation meant to establish an 80 per cent reduction in neonics use by 2017. The regulations came into effect July 1, and Ontario farmers ordering seed this fall will be restricted to using neonics on only 50 per cent of their crops, unless they can demonstrate a need to use more. After Aug. 31, 2016, growers will need to attend integrated pest management courses and submit pest assessment reports to use any amount of neonics on their fields. No similar action has been proposed in Alberta.

The legislation and continuing war of words has led to tensions between beekeepers, advocacy groups, the Ontario government and farmers. Companies like Bayer and Syngenta, and farmer groups like the Grain Farmers of Ontario (GFO), have argued that bee health is dependent on a multitude of factors, including weather, pest pressure and habitat.

“I think the biggest thing is that we step back and say we’re not comfortable saying it’s purely neonics that’s killing..."
Although Alberta has vast fields of neonic-treated canola, they haven’t seen bee losses like Ontario has. Ontario doesn’t grow much canola, but it does grow a lot of corn and soybeans. It’s generally agreed that corn and soybeans are not good foraging crops for bees. Corn is a wind-pollinating crop and produces no nectar. Soy is self-pollinating and likewise offers little nectar or pollen. Canola, on the other hand, offers plenty of both.

In addition, despite different amounts of seed being used at planting, the amount of neonic applied per acre for corn and soybean isn’t much greater than the amount applied in canola plantings.

Alberta beekeepers like Stony Plain’s Lee Townsend, who keeps 3,300 hives, argues it’s a great time to keep bees. “While the beekeeping industry in Canada is always facing struggles and changes from year to year, this industry has never been stronger,” he said.

The very dry summer has caused some stress on his hives, but Townsend is optimistic he’ll have an average honey crop with some co-operation from the weather. That optimism is not shared in Ontario and elsewhere.

**WORLDWIDE WORRIES**

The sense of crisis in Ontario is part of an international anxiety about the long-term health of pollinators, such as bees and butterflies. Grim reports of high honeybee winter losses abound. Bees are recognized as playing a vital role in crop pollination and are commonly estimated to be responsible for one-third of global food production.

In the United States, beekeepers talk of “colony collapse disorder,” a syndrome first observed in 2006 in which hives are found nearly deserted in the spring, with only a few worker bees, the queen and bee larvae left behind. Europe, facing similar public concern about pollinator health, announced a moratorium on neonic use in 2013. Crop yields in Europe have since dropped, and there’s considerable pushback against the ban in some regions. Recently, oilseed rape farmers in several counties in the U.K. have been granted permission to use neonics on their fields after demonstrating significant pest damage.

Beekeepers, experts and farmers opposed to blaming neonics point to an increase in honeybee numbers in Canada over the last 10 years. Despite the sharp regional losses of recent winters, there has been no overall drop in worldwide honeybee numbers. In Western Canada, the beekeeping industry is booming.

Ontario beekeepers say the numbers reflect frantic efforts to replace dead or unproductive hives. Furthermore, they say their losses are unsustainable, and fingers have pointed persistently at the widespread use of neonics.

**ACCUSATIONS FROM ALBERTA**

Alberta beekeepers have been critical of Ontario’s response to its high bee losses. Part of the divide in opinion stems from the very different beekeeping dynamics between the two provinces.

Alberta produces more than 45 per cent of the nation’s honey. That’s twice as much as both Ontario and Saskatchewan, which are tied for second place in honey production. The majority of Alberta’s beekeepers are commercial operations, with hundreds or thousands of hives and strong ties to the agriculture industry through pollination contracts.

Although Ontario produces half the honey Alberta does, it has twice the number of registered beekeepers, the majority of which are small or hobby operations with fewer than 50 hives. Albertan farmers and beekeepers also frequently mention that although Alberta has vast fields of neonic-treated canola, they haven’t seen bee losses like Ontario has.

**“Every family of chemicals or pesticides over the years has gotten more targeted and safer for the user.”**

—Kevin Nixon
THE BUZZ ON NEONICS

Neonicotinoids are a class of pesticides first introduced in the 1990s.
• Neons are considered by industry to be relatively mild in their effects on birds, mammals and fish compared to previous pesticides.
• Neonics are toxic to all insects and kill by binding to neuronal pathways in the insect’s brain.
• The most commonly used neonics are thiamethoxam, clothianidin and imidacloprid.

The most common use of neonics in Canada is seed treatment.
• Neonic-coated seeds are planted in the spring.
• As the plant grows, the neonic coating is absorbed into the plant.
• If an insect eats the plant, the neonics kill the insect.

Neonic seed treatment was first introduced to Canada in 2003.
• Adoption of neonic-treated seed soared and became common industry practice.

Worldwide, neonics now make up almost 30 per cent of the pesticide market.
• Virtually all canola seed sold in Alberta is treated with neonics, a total of more than six million acres in 2014.
• Nearly all of Ontario’s two million acres of corn and 60 per cent of its three million acres of soy are treated with neonics.

SMOKE SIGNAL: According to Townsend, beekeepers need to improve their own practices to reduce bee losses.

THE POLITICS OF THE PRECAUTIONARY PRINCIPLE

A common complaint from both sides is that people are misusing the science on neonics and that it’s become a “shell game” driven by politics. The problem stems from the nature of neonics and the scientific studies conducted so far.

Neonics are toxic to all insects, and that includes honeybees. Numerous studies have shown that sublethal exposure to neonics can permanently impair honeybees. The effect of neonics on bees is not in dispute. The issue is whether current industry practices expose bees to neonics in sufficient quantities to affect the health of the hives. On that score, there isn’t sufficient research to create consensus.

“Even where there may be lingering doubts, I think we really need to come back to the precautionary principle,” said Lisa Gue, senior policy analyst at the David Suzuki Foundation. “And the precautionary principle holds that where there is a risk of serious harm or irreversible harm, the lack of complete scientific consensus can’t be an excuse to delay action.”

It was the precautionary principle that spurred the European Union to impose a moratorium on neonics in 2013.

Changing agricultural policy based on the precautionary principle does not appeal to farmers who face potential crop losses. A steep reduction in neonics use will mean an increase in crop re-plants, Brock said. It might also mean a return to older farming practices. Neonic seed treatment allowed no-till farming, which meant less soil erosion and lower emissions from farm equipment, Brock said.

“The fear is that farmers are going to have to protect their crops one way or another,” said Pierre Petelle, vice-president of chemistry at CropLife Canada. That might mean a return to foliar sprays, which has already been seen in Europe.

PESTS AND PESTERING

The varroa mite, a destructive bee parasite, is thought to be a factor in Ontario’s losses. A large-scale study conducted from 2008 to 2009 by Guelph University researcher Ernesto Guzman pointed to varroa as the principal cause for Ontario’s 2008 winter bee mortalities of 27 per cent. The study did not examine pesticides as a factor in bee mortalities.

Alberta went through a similar situation in the winter of 2007/08, when Alberta’s bee losses spiked to more than 30 per
Participant in CFQAP

not wait after beekeepers, environmental groups and voters.

those models takes years. Years the Ontario government did
what pests they’ll face in the spring, Brock said. But creating
expected to come out at the end of 2015.

In Alberta, Townsend maintains that it’s important to know
that blame for bee losses can’t be placed solely on pesticide
and farming practices. “It’s not going to go away anytime
soon, but somehow it has to be brought up to everybody
outside of the beekeeping industry that beekeepers themselves
have to improve what they’re doing,” Townsend said.

Meanwhile, Ontario surges ahead with its neonics-reduction
measures. Even after the measures are fully in place, it will likely
be several years before the full effects are known. And the
neonics debate in Ontario won’t resolve itself without an impact
on farmers, beekeepers and the agriculture industry.

“There’s going to be casualties on both sides,” Brock said.

 cent. After pest control was developed and implemented
throughout Alberta in 2009, Alberta’s bee losses dropped
significantly, starting in 2011.

“In Alberta, we diagnosed the problem at early stages and
said, ‘That’s failure of varroa mite control,’” said Medhat Nasr,
Alberta’s provincial apiculturist and president of the Canadian
Association of Professional Apiculturists.

That’s not to say that pesticide use is never considered as a
potential cause in Albertan bee mortality cases. “We in Alberta
are not saying, ‘Ignore that part,’” Nasr said, adding that
monitoring pesticide use is always encouraged.

For Townsend, Alberta’s successful turnaround is proof that
Ontario beekeepers should be examining their own practices
as a potential cause. “When we as beekeepers out west
hear the response from the Ontario Beekeepers’ Association
saying ‘Well, we’re beekeepers, we know what we’re doing,
we have control over our diseases and pests,’ it just makes us
shake our heads because none of us have control over our
diseases and pests,” Townsend said.

Yet Bryans insists he has kept tight control of mites in his hives,
monitoring varroa levels and treating his hives in the spring and
fall as recommended by the province.

It doesn’t help that Ontario provincial apiculturists like Paul
Kozak admit there’s uncertainty about how beekeepers who
follow established mite-control guidelines can still see severe
losses. “We know that varroa mites there can be a serious issue,
but where we see that there’s fairly broad data to demonstrate
that they’re being controlled effectively, that sort of brings into
question whether it is varroa mites,” Kozak said.

“Definitely there are going to be individual beekeepers who
have fallen through the cracks or are still facing issues.”

BEST MANAGEMENT PRACTICES
Neonic seed treatment has been defended as a more targeted
application of pesticides than foliar sprays, since neonics are
applied to a much smaller area and in a less intrusive way.

The reality is just the opposite, Gue said, because neonic
seed treatment is now applied to almost all corn and canola,
and the majority of soybeans. “It’s just become in many cases
common practice, without, in fact, any assessment of whether
or not there even is a pest threat present,” Gue said.

The problem is that farmers don’t know what pest problems
they’re going to be facing in the spring when they order seed
in the fall, Brock said. Rather than take the chance of losing
crops to pest insects, farmers choose to buy neonic-treated
seed as insurance. “We’re making seed decisions in October,
November and December for seed we’re going to plant
hopefully in April and May.”

To mitigate crop losses, farmers need predictive models for
what pests they’ll face in the spring, Brock said. But creating
those models takes years. Years the Ontario government did
not wait after beekeepers, environmental groups and voters
clamoured for action.

SLOW-ARRIVING SCIENCE
“There is an independent body here in this whole equation,
even if you disregard what CropLife says, and disregard what
others say,” said Petelle.

Petelle is referring to the PMRA, the federal agency
whose report started the Canadian debate in earnest and
is now conducting a re-evaluation of neonics and their
effects on pollinators. The PMRA is collaborating with the
U.S. Environmental Protection Agency and the California
Department of Pesticide Regulation. A preliminary report is
expected to come out at the end of 2015.

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grainswest.com
In 2015, Canadians find themselves at a crossroads. After four years of majority government, it’s time to go back to the polls. In a tight three-way race between the Conservatives, Liberals and NDP, any outcome is possible. These next five pages are a one-stop shop for information about the upcoming election, with everything you’ll need to help you make an informed decision when you cast your ballot on Oct. 19.
Prime Minister Stephen Harper’s Conservative Party formed government in 2006, with two minority mandates followed by a majority from 2011 onwards. The Conservatives currently hold 159 seats in the House of Commons, with most of their support coming from Ontario and Western Canada.

Harper attended the University of Calgary, where he received a bachelor’s degree, and eventually a master’s, in economics. He was elected to federal office in 1993 as the MP for Calgary West and a member of Preston Manning’s populist Reform Party. Reform became the Canadian Alliance in 2000, and in 2002, Harper was elected as its leader, succeeding Stockwell Day.

The Conservative Party was created in 2003 when the Canadian Alliance and Progressive Conservative parties merged. Harper was elected as leader of the new party, defeating Belinda Stronach and current Conservative MP Tony Clement.

After nearly 10 years at 24 Sussex, Harper is one of Canada’s longest-serving prime ministers. If he receives another majority mandate in 2015, he could move past Jean Chrétien into fifth place, behind only Sir Wilfrid Laurier, Pierre Trudeau, Sir John A. Macdonald and Mackenzie King.

If the Conservatives want to secure a new mandate, they’ll have to defend the bulk of their Ontario seats against strong Liberal and NDP competition, while maintaining a stranglehold on Western Canada.

Justin Trudeau’s Liberal Party holds the third-highest seat total in the House of Commons with 36. Most of the party’s current support comes from Ontario and the Atlantic provinces. Viewed by many as Canada’s “natural governing party” due to several long periods of uninterrupted Liberal governance throughout Canadian history, the Liberals were reduced to their lowest seat count ever and demoted to third place among the federal parties in the House of Commons for the first time in 2011.

Justin Trudeau is the eldest son of former Liberal prime minister Pierre Trudeau. He holds a BA in literature from McGill University and an education degree from the University of British Columbia. He was first elected to public office as the Liberal MP for the Montreal riding of Papineau in the 2008 federal election. In 2013, Trudeau was elected as leader of the Liberal Party with roughly 80 per cent of the vote from Liberal Party members and registered supporters.

For the Liberals, the road to victory runs through Ontario, where the party will likely have to increase its seat count fourfold in order to form government. The Liberals will also need to make gains in Atlantic Canada and in the West, where they currently hold only four seats in the Prairie provinces and British Columbia combined.
For the 2015 election, there will 30 additional electoral districts (ridings) in Canada, due to the redistribution following the decennial census.

In Alberta, there are six additional ridings and 34 total seats up for grabs.

**Old riding boundaries (2003-2013)**

**New riding boundaries (2013-present)**

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1. **Bow River**: This new riding has been carved out of three other electoral districts that come from Conservative roots, but anything’s possible. Brooks Mayor Martin Shields will carry the Conservative torch, although it seemed like country singer George Canyon was going to be the nominee before a health scare made him reconsider politics. Shields will run against NDP candidate and Bassano town councillor Lynn MacWilliam and Liberal Mac Alexander.

2. **Edmonton Riverbend**: A new riding where a winner is anyone’s guess. Matt Jeneroux was a one-time PC MLA in 2012 before losing his re-election bid to Thomas Dang as part of the NDP majority. Jeneroux defeated “lake of fire” Wildroser Allan Hunsberger and later introduced Bill 203 during his short tenure at the legislature, bringing in a compassionate care leave for Albertans. Liberal Tariq Chaudary, a self-described “business professional and educator with 35 years experience,” is also running.

3. **Calgary Centre**: A tight, two-way race is shaping up in this downtown-Calgary riding between Conservative incumbent Joan Crockatt and Liberal candidate Kent Hehr. Crockatt was elected in a 2012 byelection. Hehr is a former Liberal MLA for Calgary-Buffalo who won the provincial riding handily in 2008 and 2012.

4. **Calgary Skyview**: This demographically diverse riding in northeast Calgary might provide the Liberals’ best chance of victory in the city. Conservative MP Devinder Shory, who has represented Calgary Northeast since 2008, is running against Liberal candidate Darshan Kang. Kang was the Liberal MLA for Calgary-McCall from 2008 to 2015. The NDP candidate in the riding is Sahajvir Singh.

5. **Calgary Confederation**: Due to boundary redistribution, this new riding has no incumbent and is wide open to all parties. Former PC MLA Len Webber secured the Conservative nomination in this historically right-leaning riding. The Liberal candidate is local lawyer Matt Grant and the NDP is running former CBC and CTV journalist and Pembina Institute communications lead Kirk Heuser.

6. **Calgary Heritage**: A new riding for the 2015 election, Calgary Heritage’s boundaries are similar to the old riding of Calgary Southwest. Prime Minister Stephen Harper, who has represented Calgary Southwest for the Conservatives since 2002, is running here. He is poised to triumph once again in this traditionally Conservative part of the city. The last sitting prime minister to lose her seat in an election was Kim Campbell, who was defeated in Vancouver Centre in 1993. Prior to Harper, Reform Party founder Preston Manning represented Calgary Southwest from 1993 until 2002. Liberal candidate Brendan Miles and NDP candidate Matt Masters Burgener are opposing Harper.

7. **Grand Prairie-Mackenzie**: As long as anyone can recall, this has been a blue riding. It still is, thanks to one of the Conservatives’ younger MPs, Chris Warkentin. Earlier this year, however, the provincial election saw history made as the NDP earned its first seat and incumbent Frank Oberle was tossed aside by unknown NDP candidate Debbie Jabbour. Is the riding poised to go to the NDP like it did in May?
GMOs and GMO Labelling

“There’s nothing that shows that GM foods are less than nutritious. They’re far more energy efficient. [GMO labelling] is totally unnecessary. Everything goes through an extremely stringent process by Health Canada. To talk about mandatory labelling, especially as the NDP have talked about, is redundant. It serves no purpose.”

“We’ve been genetically improving and changing grain for eons. We just used to basically do it in a very crude way, whereas now we do it in a more scientific way. Certainly, on the labelling piece, what we said is we’d go back and take a look at labelling. We’ve always been clear that we think we should have clear labelling that makes sense to folks.”

“I think we can have both GM and non-GM crops in this country, no doubt. I mean some of the European countries have dabbled in picking winners and losers, but I think we can have both. At the end of the day, science says both products are safe, healthy and nutritious. We’re not in favour of mandatory labelling because there’s no reason, because it’s not a food safety issue.”

Neonics

“We would never be heavy-handed and mandate that kind of thing,” he said regarding reductions in neonic-treated seed. “Farmers and seed guys themselves have coated seed and new ways to put it in the ground. Industry is adjusting to the realities of the day. There’s no scientific, peer-reviewed [study] that says neonics is the culprit. It might be any number of things.”

“We’ve continued to say we need to look at the science of it. We want the partners to work together. If it becomes, ‘let’s not do it here, but we can do it over there,’ that’s not a good situation for farmers. They want to know that everyone is on the same playing field. I think that’s appropriate. So we’ve never called for a moratorium, nor have I called for banning.”

“There’s just not enough science from our perspective to totally ban neonics. So we are not on the same side as the Ontario government right now. Ontario growers are competing with growers just a couple hundred miles south of them or east or west. So I think when you’re approaching not just neonics, but any kind of decision like this, it has to be more of a national decision.”

Trans-Pacific Partnership and Supply Management

“There’s huge potential with [the] Pacific Rim and [the] TPP. I’m quite optimistic that we’ll end up with a result at the end of the day. Things will get done. Everybody recognizes that. Every country has concessions. The supply-managed farmers want to be part of the solution, not part of the problem,” he said, indicating the TPP does not mean the end of supply management. “They’re willing to take a little water in their wine. We all are.”

“We’ve been clear that we support supply management. The big issue for me with the Canadian delegation and this government is if you’re desperate for a deal, you get taken advantage of. If you’re going to bargain a deal and your opponents know you desperately want it, they will take advantage of you. That’s how bargaining works. This government is desperate to get a TPP deal, and you end up not in a good position.”

“I think with the European agreement and [the] TPP they’ve done a big injustice to supply management. One of the biggest issues in any agreement with any other country is always agriculture. I have yet to find a country that doesn’t have some sort of protection or sensitive crop or product in their country. So I think, at the end of the day, they’ve failed supply-management farmers by even having it on the table.”

GrainsWest quizzed Agriculture Minister Gerry Ritz, Liberal agriculture critic Mark Eyking and NDP agriculture critic Malcolm Allen about their positions on a variety of issues that are important to farmers. For the extended interviews, visit grainswest.com.
**HARPER’S 10-YEAR TENURE:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Elections</th>
<th>Policies &amp; Legislation</th>
<th>Important Events</th>
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<tbody>
<tr>
<td>‘06</td>
<td>↓</td>
<td></td>
<td>Jan. 23: Stephen Harper’s Conservatives defeated Paul Martin’s Liberals to win a minority government. The Conservatives took 124 seats to the Liberals’ 103, the Bloc Québécois’s 51 and the NDP’s 29, with one independent seat. This was the first Conservative government since 1988.</td>
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<td>Feb. 6: Harper appointed Chuck Strahl, Chilliwack–Fraser Canyon MP, as minister of agriculture and agri-food. Strahl took over for Liberal Andy Mitchell, who was at the post during the bovine spongiform encephalopathy (BSE) crisis, which included an unsuccessful half-billion-dollar bailout.</td>
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<td>July 1: The federal government lowered the GST to six per cent (to be lowered further to five per cent by Jan. 1, 2008).</td>
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<td>‘07</td>
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<td>May 3: The House of Commons passed the Conservatives’ Fixed Election Dates Act, which provides for elections every four years unless a government is defeated in the House of Commons.</td>
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<td>‘08</td>
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<td>Oct. 14: The Conservatives returned to office with a stronger minority of 143 seats. The Liberals took 77, the Bloc Québécois 49, the NDP 37 and independents two.</td>
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<td>Dec. 4 to Jan. 26, 2009: Parliament was prorogued at Harper’s request to prevent a non-confidence vote that would have installed a coalition government.</td>
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<td>‘09</td>
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<td>Dec. 30 to March 3, 2010: Parliament was prorogued once again.</td>
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<td>‘10</td>
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<td>June 17: The mandatory long-form census was eliminated, prompting the resignation of Statistics Canada head Munir Sheikh in July.</td>
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<tr>
<td>‘11</td>
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<td>May 2: Conservatives returned to office, this time with a majority government of 166 seats. The NDP takes 103, Liberals 34, Bloc 4, Greens 1. This marks the first time in history the NDP earns more than 45 seats.</td>
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### Highs and lows from a decade of Conservative rule

#### ‘12
- **March 29:** The 2012 federal budget was tabled. One of the major elements of the budget affected Old Age Security—the age of eligibility would now increase gradually from 65 to 67, between 2023 and 2029.
- **April 6:** The federal long-gun registry was officially scrapped, a contentious move, catering mainly to rural Conservative supporters.
- **Aug. 1:** The *Marketing Freedom for Grain Farmers Act* came into force, ending the Canadian Wheat Board’s monopoly over wheat and barley marketing. The Canadian Wheat Board continued to exist as a voluntary marketing body.

#### ‘13
- **Biggest harvest on record:** The bumper grain crop in 2013 of roughly 65 million tonnes led to serious challenges when it came to storage and transportation, as the massive volume of grain that had to be shipped created a backlog in the railway system.

#### ‘14
- **April 1:** The *Fair Rail for Grain Farmers Act* (*Bill C-30*) came into effect, imposing fines of up to $100,000 per day on Canada’s railway companies (Canadian National Railway and Canadian Pacific Railway) if they failed to handle 500,000 tonnes of grain per week in the following 90 days. In a move widely criticized by the agricultural community, when the legislation was extended in August, the fines were reduced to a maximum of $100,000 per week.
- **Aug. 5:** The complete text of the Canada-EU Comprehensive Economic and Trade Agreement (CETA) was composed, after an agreement was reached in principle in October 2013. The agreement still needs to be ratified by each EU member state and the Canadian government before it can be put into force.
- **Oct. 22:** Corporal Nathan Cirillo was shot and killed by Michael Zehaf-Bibeau while ceremonially guarding the Canadian National War Memorial. Zehaf-Bibeau proceeded into Centre Block where he was gunned down in a firefight with sergeant-at-arms Kevin Vickers and RCMP Const. Curtis Barrett. Vickers was later appointed as Canada’s ambassador to Ireland.

#### ‘15
- **Jan. 1:** The Canada-Korea Free Trade Agreement came into force, Canada’s first free-trade agreement in the Asia-Pacific region.
- **Feb. 25:** The *Agricultural Growth Act* came into force (tabled Dec. 9, 2013), bringing Canada’s Plant Breeders’ Rights Act in line with UPOV 91.
- **June 18:** The *Anti-terrorism Act 2015* (*Bill C-51*), proposed Jan. 20, 2015, became law, despite massive public outcry and considerable debate in the House of Commons.
- **July 1:** The federal government’s overhaul of the Temporary Foreign Worker Program came into effect.
- **July 31:** The Harper government finalized the sale of the Canadian Wheat Board to G3 Global Grain Group, which purchased a 50.1 per cent stake in the board for $250 million.
- **Aug. 3:** Harper dropped the writ, launching an 11-week election campaign, the longest since 1872, leading up to the Oct. 19 fixed election date.
Safety first

Occupational health and safety in the works for Alberta farms

BY SCOTT ROLLANS • PHOTOS COURTESY OF BASF SE
Occupational Health and Safety (OHS) is coming soon to an Alberta farm near you.

If you’re surprised, you shouldn’t be. Our province is the only one in Canada where farm workers do not fall under OHS regulations, though the former Progressive Conservative government had been moving (very slowly) to bring Alberta in line with the rest of the country. Then, Premier Rachel Notley made OHS an issue during last spring’s provincial election. “[Farm workers] work without the right to organize; take rest periods; or receive the minimum wage, safety protections or mandatory workers’ compensation coverage,” she pointed out in a statement released April 28, just a week before the NDP’s stunning electoral victory. In July, Oneil Carlier, agriculture and forestry minister, and Lori Sigurdson, jobs, skills, training and labour minister, made it clear that the new government would be moving ahead with changes sooner rather than later.

Reactions from labour, industry representatives and producers have ranged from enthusiasm to grudging acceptance. However, virtually everyone recognizes that the change was inevitable. Everyone would agree that safety is a good thing.

Agriculture, like all industries, carries risk. According to Canadian Agricultural Injury Reporting, 1,975 accidental agricultural deaths were recorded in Canada between 1990 and 2008. Fatality rates have been declining in recent years, but it seems obvious that even one preventable farm fatality is one too many.

At the same time, the prospect of major regulatory changes—especially ones initiated by a labour-friendly government—was bound to make some in the industry uneasy. Carlier is eager to put those worries to rest. “We’re the new cowboy in town,” he admitted. “We’re going to make sure we have proper consultations with farm workers or producers, small or large.”

So far, Carlier has been heartened by the reception he has received. “I’m very optimistic [from] the folks I’ve talked to. They have a few misgivings about how things are going to work. For the most part, people are not only realizing this is going to happen, [but also] looking forward to it, because it’s the right thing to do.”

Formal consultation began in late June, when Carlier and Sigurdson met with representatives for farmers and ranchers. Sigurdson’s department will be responsible for the nitty gritty of any changes—things like the right to organize (unionize), minimum wage, restrictions on the number of hours worked, and mandatory workers’ compensation coverage—but she insisted that her first job is to listen. “There’s no master plan that we have hidden in the bottom drawer that we’re going to pull out,” she said. “We really want to create this in a collaborative way with the farm and ranch sectors.”

Ron Axelson, a consultant with the Intensive Livestock Working Group of Alberta, was at the June meeting. He said that his group had been moving toward OHS long before the new government arrived on the scene. “We’ve actually been working on this issue for over two years, and I think we do have a fairly strong consensus—on the livestock side of things anyway—that change is required.”

Axelson and his colleagues have a fairly clear idea of how they’d like things to proceed. “We want to move forward in a staged or incremental basis, starting with fatality and serious incident reporting,” he said. Currently, OHS has no mandate to investigate injuries or deaths on farm worksites.

Next, farmers and ranchers hope to work collaboratively with government to develop technical OHS standards aimed specifically at farming. “The main worry is that the exemption will be removed and that suddenly agriculture will be under exactly the same technical rules as the rest of the general industrial sectors,” said Axelson. “That isn’t going to work for agriculture, because there are some very unique circumstances.”

Axelson also worries that workers’ compensation coverage may be mandated across the board—in some cases displacing private insurance that he said actually provides better coverage for workers. “We’re afraid that there will be some kind of draconian regulation brought in that says everybody should be under [the Workers’ Compensation Board], and that’s the end of it.”

Overall, though, Axelson welcomes the move towards OHS on farms, particularly if it’s backed by the training and support to foster an overall culture shift. “A regulation, on its own, will do nothing,” he argued. “It’s the implementation of a philosophy, or mindset, of farm safety that’s going to make the difference.”

Sharon McKinnon, head of the Crop Sector Working Group, attended the June meeting as well, and came away with a similar list of hopes and concerns. She would like to see the government spend at least a couple of years working with industry to develop technical standards for farming and ranching. “It’s not the same as construction. It’s not the same as the oil and gas industry,” she said.

McKinnon felt that the initial consultation went a long way towards quelling people’s lingering apprehension. “The meeting was very well attended—I think the industry was well engaged, and they appreciated having the ministers there for the entire morning to hear about industry concerns. It went very well,” she said.

The View to the East

Clearly, a lot of work remains in the
MEASURED CHANGE: The government of Alberta is taking steps to work with farmers and ranchers to improve on-farm safety conditions.

months and years ahead. But, if Alberta’s two provincial neighbours to the east are any indication, Alberta’s agriculture industry should be able to manage the transition without too much upheaval.

In Manitoba, agriculture was rolled into provincial workplace, health and safety rules in 2009. Although there’s no clear evidence yet of a decline in provincial accident and fatality rates, farmers and ranchers seem to have adapted just fine.

“I have to give the province credit,” said Doug Chorney, former president of Keystone Agricultural Producers (KAP), Manitoba’s provincial farm policy association. “They’ve actually been very patient with us, and helped us come into compliance. They haven’t pushed hard enforcement intensely at us. Certainly, if there’s an incident on a farm, there are no exceptions made, but, by and large, the province has tried to work with us.”

Chorney points to the province’s regional agricultural safety officer based in Brandon, who has made a point of interacting with local farmers rather than just showing up at the gate brandishing a clipboard and a red pen. “He’s been really good to work with,” said Chorney. “He is a really down-to-earth, farm-background person. He’s been attending meetings and just sort of showing farmers that there’s not a big monster coming to see them.”

The shift to OHS in Manitoba was easier for large operators, Chorney said. “For a lot of our more sophisticated farm employers—people running intensive livestock operations, for example, and sometimes affiliated with a company like Maple Leaf Foods—this was not a big step to take, because they were doing a lot of things in their processing plants already, and they had the HR capacity to help their farm operations adapt quickly.”

Like Axelson in Alberta, many in Manitoba were concerned about the prospect of mandatory workers’ compensation. “We felt the private sector offered us a lot of alternatives to [workers’ compensation] that were competitive and appealing to many of our members. However, around January 2009, we went to mandatory inclusion,” said Chorney. Once the decision was made, KAP and others shifted their efforts to negotiating a fair rate—which was then locked in for the first two years, to give the sector a chance to adjust. “We did a pretty good job—our rates have been pretty stable.”
Chorney thinks the changes have helped make safety a priority for Manitoba farmers, even if it’s not yet reflected in the statistics. “I’m really seeing a cultural shift away from something like, ‘Don’t talk to me, this isn’t my problem, I’m busy in the field,’ to, ‘You know, maybe I do want to learn about this.’ People learn that it’s not a big bridge to cross.”

He has even noticed a change in his own attitude. Recently, Chorney attended a KAP-sponsored safety workshop, and suddenly found himself looking around his farm with fresh eyes. “I came back from that meeting, and I had a broken stepladder I was using by my fuel tanks,” he recalled. “I threw it away. It cost me $75 to buy a new ladder. It’s a simple thing to do. Really, I shouldn’t be climbing on a broken ladder, right? That’s stupid.”

In Saskatchewan, farms have long fallen under provincial OHS regulations. Harvey McEwen, a veteran grain farmer in southeastern Saskatchewan, said that most farmers don’t give it much thought. “I don’t think our farm is much different than anybody else’s, in that we have attempted to be safe for the last hundred years,” he said. “Nobody wants to get hurt.”

All the same, McEwen empathizes with the anxiety currently felt by some Alberta farmers and ranchers. “I suppose, like most farmers, we’re not anxious to have more regulations put on our businesses than we already have,” he said. “But this is one area where farms are becoming larger and more commercial, and have employees, not just casual, weekend family members helping out.”

McEwen’s son Blair wonders if some Saskatchewan farmers are aware that they even have official safety responsibilities. “I think, for the most part, nobody really feels affected by it at all,” he said. “It’s still extremely relaxed on the ag side when it comes to rules and regulations for health and safety.”

Although workers’ compensation coverage is optional in the province, Blair recently opted in for the employees on his family farm. He was grateful to have it this past winter, when a worker injured his back after slipping on some ice. “He hasn’t worked since February,” Blair pointed out. “Who’s going to pay his bills?” Since then, he has been spreading the word. “I try to preach that to everyone I know—go get workers’ compensation. It’s cheap, it’s reliable.”

AHEAD OF THE GAME

McEwen would get no argument from Michael Kalisvaart. Kalisvaart runs a 12,000-acre grain operation near Gibbons, AB, employing eight or nine people year-round and about 15 during harvest. He had been relying on a private insurance provider to cover his staff, but voluntarily switched to workers’ compensation to provide more extensive protection. He had worried that it might be expensive or come with too many requirements. “Our impression was that there was a lot of interference as far as requiring safety regulations and things like that—that they would cost us a fair bit of money to get our farm up to a safety code similar to other commercial enterprises. But we found they were very reasonably priced,” he said. Kalisvaart thinks the farm is almost ready for a Workers’ Compensation Board safety audit, which would reduce costs even further.

Workers’ compensation coverage reduces Kalisvaart’s own liability exposure, but he insists that the switch was more for his employees’ sake. “It was more income protection—that if something did happen, they would have good coverage, and we wouldn’t have the heartache and the guilt of having somebody struggle for the rest of their life with their income,” he said.

For other farmers who wish to stay ahead of the issue, the Government of Alberta recently completed a successful pilot for its Alberta FarmSafe Plan. The program offers extensive learning resources, along with training and consulting services. Grants are also available. The goal is to help farmers develop health and safety systems for their businesses. With a solid safety plan in place, producers should be well positioned to meet the requirements of any new OHS regulations.

In the meantime, Sigurdson promises ongoing consultation, clear communication and a measured, gradual approach. “Everybody doesn’t have to turn on a dime—all of a sudden the legislation’s changed, and now you have to change by tomorrow,” she said. “Clearly, we are looking at an approach that is respectful of giving farm and ranch folks an opportunity to make the shift.”
Education not regulation

THE CROPPING AND LIVESTOCK
sectors have been working with senior staff from Alberta Agriculture and Forestry (AF) and Jobs, Skills, Training and Labour (JSTL) for over a year on farm safety issues. There have been three industry/government policy discussion meetings involving representatives from Alberta’s agricultural boards and commissions. A Safe and Healthy Farms and Ranches Working Group with representatives from the cropping and livestock sectors as well as senior staff from AF and JSTL has been looking carefully at the exemption from Occupational Health and Safety (OHS) oversight that farming and ranching has in Alberta. Much of the discussion has been around how the exemption doesn’t allow OHS inspectors past the farm gate. Most of the farm groups involved with these discussions have agreed that allowing OHS to investigate serious incidents and fatalities on farms is an important move.

Removing the OHS exemption for farming and ranching is relatively easy as it’s under regulation. However, OHS technical rules (regulations in the OHS Code of Practice) that exist for other industries would not apply to farming and ranching under the scenario discussed with the industry—that is the removal of the exemption. How current best practices could become part of the technical rules for our industry has been discussed in general but not in depth. In our Working Group discussions, we have been clear that the industry must have input into developing technical rules if they are going to be required. That is as far as we have gone in the discussions.

The new NDP government has farm safety in its sights, and specifically farm worker safety. This is a big issue for farming operations that employ many farm workers, like intensive livestock and vegetable operations, but also for crop farms run by owners and their families, who may employ even one or two occasional workers.

At the most recent industry/government policy discussion meeting on June 29, government staff introduced the issues of labour relations, employment standards and workers’ compensation coverage. These go far beyond the removal of the OHS exemption for farming and ranching. The agricultural boards and commissions have had no opportunity to discuss these farm labour issues with their members. There are a lot of concerns in Alberta about what this means for farmers. Some voiced within the crop commissions include:

- How soon will the OHS exemption be removed and what does that change look like at the farm level?
- What about farm kids working on their family farm learning how to farm? Will they be prohibited from working for pay?
- What about neighbours’ kids hired for farm work?
- What about hours of work? There are rules in other industries but agriculture is seasonal and weather dependent. Will hired workers just go home after eight hours during harvest because OHS rules say so?
- Will OHS inspectors come on farms and shut down operations at critical times if there is an injury? Will they be allowed to do unannounced audits? Will they have any practical or specialized knowledge of farming operations?

In Ontario, OHS covers all farming operations with paid workers but there are no technical rules. Instead, there is a set of flexible guidelines for farms; farmers and farm operations are expected to practice due diligence in the protection of farm workers.

Saskatchewan’s Farm Safety Guide provides advice about training, clarifies employer and worker roles and responsibilities, and identifies workplace hazards on the farm. There are also specific regulations that apply to farming and ranching in the OHS legislation—the technical rules noted previously. For the most part, Saskatchewan farmers are generally unaware that they are subject to OHS. A Saskatchewan farmer with a number of employees who has experience with OHS noted that OHS hasn’t been a hindrance for farmers. However, if OHS were to become intrusive and legalistic, and if they start doing unannounced farm audits, then farmers will have a problem with them.

Farmers support safe working conditions and don’t want to see their workers, families or themselves get hurt. Regulations alone won’t make farms safer. Awareness and education must be the foundation of farm safety policy in Alberta. Farmers and ranchers need to be at the table through formal consultations before any regulatory changes come into play.

Sharon McKinnon is the Policy Program Coordinator for the Crop Sector Working Group, a partnership of Alberta crop commissions that addresses environmental and sustainability issues for the crop sector in Alberta.
Alberta needs to play catch-up

Alberta is a province rich with culture, diversity, natural resources and history. Our rural heritage provides us with a solid connection to the land, a devotion to hard work and the satisfaction of a job well done.

Our government believes a job well done means the job is done safely and workers are treated fairly. This is one aspect of life and work in rural Alberta that needs improvement. I’m speaking of the 60,000 workers on Alberta’s farms and ranches who are not protected by workplace legislation—the same legislation that applies to the other two million workers in our province.

Currently, Alberta is the only province in the country where occupational health and safety (OHS) legislation does not apply to farms and ranches. Most of our Employment Standards Code doesn’t apply either. What’s more, farm workers do not have mandatory workers’ compensation coverage like those in most other industries, and our Labour Relations Code forbids them from unionizing.

This failure can have a devastating impact on workers and their families. On Father’s Day in 2006, grain silo worker Kevan Chandler was killed on the job. OHS officers could not investigate because this happened on an Alberta farm. Without the coverage the rest of Albertans take for granted, his widow struggled to support herself and her children. This is a situation that should never happen. But this is our reality.

Approximately 97 per cent of farms do not have Workers’ Compensation Board coverage, and in 2014, 25 farm workers were killed on the job. The sad fact is that, under current legislation, farm workers can be fired for refusing unsafe work. Even one farm-related fatality is too many, and these numbers represent incidents that have lasting impacts on families, producers and rural communities. This status quo is not acceptable and we’re committed to making sure every Albertan is able to come home to their loved ones at the end of the day.

While farm workers in Alberta are covered by such employment standards as termination notice/pay, maternity and reservist leave, and the right to be paid for their work, they are not entitled to holidays, rest breaks or minimum wage.

I want to recognize the farmers and ranchers who have taken the initiative to protect their workers and treat them well. Our government believes everyone deserves that same protection. The current situation is inherently unfair and, despite the traditions that have been built up over the years, a farm or ranch worker is really no different than a worker in any other industry. Extending protection to farm and ranch workers is simply the right thing to do.

Our first priority in this process will be to work with this unique industry to ensure we strike the right balance of workplace legislation. There is no doubt that farms and ranches are different from construction sites, the oil and gas business, and other sectors. My colleagues in the Ministry of Agriculture and I will be sure we have a full understanding of those nuances, and the way we’ll do that is through continued conversations with farm and ranch employers, workers and industry groups.

I have said that our government will be moving forward on this issue in the near future, and we will. We are currently working out the details, and I hope to make an announcement this fall.

Throughout the summer, I have heard from many organizations that they welcome these changes. I appreciate their support, and I applaud their realization of the need for improved protection for farm and ranch workers. They are showing the kind of spirit of co-operation, fair-mindedness and empathy for their friends and neighbours that make Alberta the great place it is.

Our government will continue to stand up for Albertans and their families to ensure everyone has access to a safe and healthy workplace. We believe workers deserve protections, no matter what profession they choose.

Lori Sigurdson is the NDP MLA for Edmonton-Riverview and minister of advanced education and innovation as well as jobs, skills, training and labour.
Coping strategies for drought

REDUCING THE EFFECTS OF LOW WATER AVAILABILITY ON PLANTS

WATER—OR, MORE ACCURATELY, the lack of it—has been on the minds of many producers in Western Canada this summer. Drought, and its devastating effects, have been with us since the beginning of agriculture. A number of recent studies indicate drought as one of the major reasons for the collapse of the Maya Empire in AD 850 to 900. In the 20th century, geopolitics were shaped by devastating droughts in China, portions of the former Soviet Union, India and Ethiopia. Here in North America, the media has been focused on the California drought, with the result that people are wondering whether it is politically correct to eat almonds.

What has science done to address the issue of lack of water? One of the first actions was simply to define drought and measure its severity. There is a wide range of definitions for what drought actually means—even though we all know it when we see it. It is difficult to define because it results from an interaction between a number of factors: precipitation; evapotranspiration (moisture given off during normal plant processes); the amount of sunlight; the soil composition and moisture status; and insects, diseases and weeds. In 1965, the Palmer Drought Severity Index was developed as a comprehensive indicator of moisture status. It uses readily available temperature and precipitation data to calculate water availability for agriculture.

Two main approaches are taken in agricultural research to address the impact of drought. First, plant breeders have sought to incorporate traits that might limit the impact of low water availability. These include enhanced rooting systems, increased waxiness of leaves, changes to the size and function of stomata (the openings in leaves that enable movement of carbon dioxide and oxygen into and out of the leaf), changes to the structure of the leaf canopy, early maturity (which can escape some seasonal drought), and changes to the earliness and duration of flowering. Second, agronomists have made major contributions to soil moisture management through a vastly improved understanding of irrigation management and innovations such as reduced tillage.

Due to the complexity of drought, it has been difficult for researchers to develop rigorous methods for testing new ways to enhance crop response to drought. The research community has identified four major coping strategies to reduce the impact of drought on crops (in some cases, plants use a combination of these strategies).

**Drought escape:** Researchers have focused on two specific mechanisms: early flowering leading to early maturity, and variation in the growing period depending on the amount of water deficit. In Australia, plant breeders at the Commonwealth Scientific and Industrial Research Organisation have credited earlier flowering as the biggest factor in increased wheat yield.

**Drought avoidance:** This response refers to the ability of plants to maintain relatively high tissue water potential despite low soil moisture. New work has shown how drought can turn on specific genes, which leads to enhanced rooting patterns in crops, thus ensuring that enough water will be available to maintain plant function.

**Drought tolerance:** Plants with this trait are able to withstand low soil moisture even with low tissue water potential. In this case, work in both cereals and broad-leaved crops has shown that drought will trigger genes to produce a host of water regulators in plant cells to protect the plant from death. A recent review from China’s leading crop-improvement centre describes hundreds of genes that are involved in such a response.

**Drought recovery:** So-called “resurrection plants” can come back to life in 24 to 48 hours, even after receiving no water for months (and, in some cases, years!). This is due to a complex biochemical process, which holds many possible opportunities for arid agriculture. I recently had the pleasure of meeting with Jill Farrant, PhD, a professor of cell biology at the University of Cape Town in South Africa, who specializes in such plants.

New research tools are providing fresh ways of looking at how crops can handle drought conditions. These tools are also showing us the complexity of the relationships between plants and the many elements of drought.

Dr. Stan Blade is dean of the Faculty of Agricultural, Life and Environmental Sciences at the University of Alberta.
DO YOU WANT TO GET INTO THE business of agriculture? Or are you in it already but need to add a specific skill? Agriculture is a big business, involved in local, regional, provincial, national and international markets. To be effective in the world of agricultural business, you do not have to have a background in farming or ranching, although that can be a benefit. Indeed, a world of opportunity awaits those from any background who are interested and willing to learn.

So what do you need? A high-school diploma would be a great start. An interest in and aptitude for numbers would be good too. We're not talking about trigonometry and algebra, but about the mathematical skills you'll need to understand finance, markets, currency and economics. An aptitude for numbers will also help you develop skills in how statistics are used in the world of business. If you've got an interest in policy and government operations, you'll be well prepared to immerse yourself in learning more about how they interact with agricultural business and your bottom line. And having a handle on the business end is great, but you'll also need to develop skills in communication so you can work effectively in a team, whether your colleagues and partners are in the next room or across the world.

There are a number of post-secondary programs that will help you gain the knowledge and skills to get ahead in the world of agricultural business. The best programs have industry involvement in the design and delivery of the curriculum. It says a lot when industry partners and agencies step up to help fund new programming aimed at helping those who want to get into the industry or add to the business acumen they already have. Cor Van Raay, one of Alberta's beef-production icons, saw this as so crucial that he provided a considerable donation to launch new programming that had buy-in from industry. He's not alone, as government agencies and cereal, oilseed and pork producers have also put their funds into program development to make sure that training meets the needs of industry.

You might be wondering how to fit coursework in agricultural business into an already busy schedule. Maybe you don't live near a post-secondary institution and are wondering how you can access the information you seek. Some post-secondary institutions have broken up courses into smaller pieces called modules. By taking the modules one at a time, you can complete a course. To help you learn where you live, and fit in learning around the other things you do with your life, these modules may be offered online. They have time limits for completion that are reasonable. For example, you may want to take only one module to meet a professional development skill. However, if you want course credits, you will need to take all the modules in the course.

While you learn, you'll have access to qualified instructors, many of whom have worked or are working in the industry. These instructors will help you achieve success in the module, course or program you enrol in.

You might be wondering if taking modules or courses will work for the aspect of agricultural business you are working in or want to get into. Agricultural business programs have content applicable across the livestock, grain, oilseed, finance and marketing sectors.

So what are you waiting for? Whether your goal is to improve your skill set or you are just starting off in agricultural business, check out the programs available to you at post-secondary institutions across the Prairies. Pick a program that has a solid tie-in with industry and that delivers current and meaningful material in a way that works for you and meets industry needs. Ask questions if you need more information. Welcome to the wonderful and exciting world of agricultural business.

Edith Olson, PhD, P. Ag, is the chair for the School of Agriculture Sciences at Lethbridge College.
Here’s plenty of excitement about a new winter wheat variety unique to Western Canada. W530 was developed by Robert Graf, research scientist, winter wheat breeding, with Agriculture and Agri-Food Canada, who is based at the Lethbridge Research Centre. It’s the first Hard White Winter Wheat for Western Canada, and Graf said the excitement builds choice in the potential end uses for W530.

“The thinking about this line, based on its end-use quality profile, is that it will fit well into the Asian steamed-bun and noodle markets,” Graf said. The pristine white flour produced by the new variety makes it a natural fit for the highly valuable Asian steamed-bread market.

Recognizable for its smooth, bright-white surface and symmetrical shape, steamed bread is a leavened wheat-flour product resulting from steaming fermented wheat-flour dough.

Lisa Nemeth, director of international markets at the Canadian International Grains Institute (Cigi), shares Graf’s excitement about the new variety and its prospects. At its processing facilities in Winnipeg, Cigi evaluated W530 for milling properties; flour quality; and performance in steamed-bread, noodle and pan-bread applications.

“Flour from Canadian Western Red Winter Wheat is already very white, and this variety is similar,” Nemeth said. “With a white bran, the flour would be even brighter at a higher flour extraction. The bright-white colour, protein content and quality of this wheat make it excellent for Asian steamed bread. That’s where the value is in this wheat.”

The impetus for moving the variety into the commercialization process was a group of growers examining what they could do to grow more profitable varieties, Graf explained. The breeding program for Hard White Winter Wheat began in the late 1990s in an attempt to produce a higher-value winter wheat.

“At the time, my thinking was that there were some markets that preferred white wheat,” Graf recalled, noting the bright flour colour Nemeth mentioned. Graf started research on
developing varieties of Hard White Winter Wheat with end-use properties similar to that of Hard Red Winter Wheat. That work progressed, but without a home for the end product, it was never a primary focus.

Over a decade later, in 2011, the Alberta Winter Wheat Producers Commission met with Cigi to discuss how to access higher-valued markets. “One of the things talked about was the Asian steamed-bun market,” Graf said, when again the point of the white appearance of the steamed bread was mentioned. “As we were talking about this, W530 came to mind,” he said.

That association meeting with Cigi prompted Graf and his team to move W530 research to the forefront. “We needed to take this line off the shelf and multiply enough grain to facilitate the work with Cigi, to see if it had the properties for Asian steamed buns. Funding of the quality work by the Alberta Wheat Commission was critical for this to happen,” he said.

W530 received interim registration at the 2015 meeting of the Prairie Recommending Committee for Wheat, Rye and Triticale, opening the door for seed-multiplication and market-development work.

Meanwhile, FP Genetics is working to get the wheat into farmers’ fields. Rod Merryweather, CEO of FP Genetics, and seed portfolio manager Ron Weik said the company will work on logistics management and selling to end users: seed multiplication, identity-preserved production and even the creation of a new wheat class.

They share the excitement over the new variety. “We see this as a new opportunity for a premium market for Canadian farmers,” Merryweather said. “Maybe it will be a good, new product that will fulfill a lot of needs.”

The fact that the variety is the first-ever Hard White Winter Wheat for Western Canada is even more exciting, Weik said. “It’s once in a lifetime that you get an opportunity like this.”

Merryweather said that, as far as wheat growers are concerned, it will be four years before the variety is ready for commercial planting—once testing is finished and four generations of seed have been produced. FP Genetics’ current plan is to plant approximately 50,000 acres a year across Western Canada.

In terms of production, Graf said farmers will find W530 very similar to other winter wheat varieties, yielding slightly more than well-known varieties AC Radiant and CDC Buteo. W530 has winter hardiness similar to AC Flourish and CDC Falcon. It has a short, strong straw and good resistance to stem, leaf and stripe rust. It is moderately susceptible to Fusarium head blight, with a lower occurrence of deoxynivalenol and Fusarium-damaged kernels than the Canada Western Red Spring checks, and is susceptible to common bunt. Graf stated that W530—whose end name is still in the registration process—is suited to any region in Western Canada, as long as good agronomic practices are maintained. As with any winter wheat, planting into standing stubble within the recommended dates for crop insurance is advised.

For milling properties, W530 is exceptional, Cigi stated, with high milling yields of bright-white flour with low ash content and excellent gluten strength relative to protein content. In addition to its promise in the Asian steamed-bread markets, W530 performs well in whole-grain pan breads and white salted noodles applications.

The mechanics of the commercialization process are progressing while Graf continues to work on other breeding projects. Recent work includes the development of W512, which is well-suited for production in Alberta and western Saskatchewan.

“We’ve got other lines in the pipeline that we hope to get registered and into production in the near future,” he said. Still, seeing a unique variety such as W530 through to this stage—and knowing that profitable commercialization is just within reach—is more than just another day at the office.

“It’s absolutely cool. This is what I do. I enjoy wheat breeding, and I feel it is what I was meant to do. To get something brand new to this stage, where it could impact farmer profitability in Western Canada, is very exciting.”
What’s Alberta doing about Fusarium head blight?

A NEW STUDY BY ALBERTA AGRICULTURE AND FORESTRY’S CROP DIVERSIFICATION CENTRE WILL HELP FARMERS RESPOND TO THE THREAT

STEVE LAROCQUE HAS A PROBLEM.
“Our frustration at the moment is that we haven’t noted any telltale symptoms in our grain, but DNA tests sometimes come back positive for Fusarium,” he said.

He wanted to do the right thing, so he sent in another sample to get a quantitative result, because the DNA test only told him that Fusarium graminearum was present, not to what degree. “We [took] another sample from the same bin, and it [came] back negative,” he said.

WHAT’S A FARMER TO DO?
It’s a serious question for all grain producers as they watch the slow, westward march of Fusarium head blight (FHB), the disease caused by the Fusarium graminearum pathogen, and want to keep it off their farms.

For Larocque, answering that question goes beyond his own Three Hills-area operation. As owner of Beyond Agronomy, an independent crop consultancy, he has roughly 70,000 acres under his care. “I look at the DNA tests as a warning sign,” he said. “It’s kind of like waiting for the hammer to fall—when conditions are right, FHB is going to happen.”

Mike Harding agrees. A research scientist at Alberta Agriculture and Forestry’s Crop Diversification Centre in Brooks, Harding is heading up a two-year Fusarium graminearum survey of Alberta, beginning this year. “Fusarium graminearum is a unique problem,” he said. “It’s very difficult to manage, and it can affect the bottom line in three ways: yield loss, downgrading and market acceptance.”
GETTING A HANDLE ON THE SITUATION
While certain wheat varieties have some tolerance to FHB, there is only one with full resistance, Canterra’s AC Emerson, so producers must manage for the disease in order to meet quality standards. And those standards are high, because deoxynivalenol (DON), the mycotoxin produced by FHB, is harmful to human and animal health, and can render a crop unsellable.

“Customers are expecting a certain quality in our grain,” said Daryl Beswitherick, program manager, quality assurance standards and reinspection, for the Canadian Grain Commission in Winnipeg. “All shipments of grain leaving Canada must be inspected by the Grain Commission so we can ensure the shipper is getting what they’ve agreed to buy.”

Canada’s official grading guide sets out FHB limits for all classes of wheat and cereal grains, and they are low. In Canada Western Red Spring, for example, which accounts for over half of the wheat grown in Canada, No. 1 can have no more than 0.25 per cent Fusarium-damaged kernels. No. 2 is 0.8 per cent, and No. 3 is 1.5 per cent. In malting barley of all stripes, it’s even lower at 0.2 per cent.

Beswitherick said that the average FHB level in Canadian shipments has remained relatively stable over the last few years. “It hasn’t grown by leaps and bounds,” he said. “But it does fluctuate from year to year, and we are seeing it move west.” Farmers in Alberta should definitely try to keep it out if they can—if you talk to Manitoban producers, a lot of their grain is downgraded because of FHB.”

The results of Harding’s survey will help Alberta growers get a clearer picture of the state of FHB in the province. It builds on earlier surveys done in 2001-03, 2005 and 2010-11.

The new survey is extensive. Ag fieldmen and Alberta Agriculture and Forestry staff will randomly select 900 fields across all cereal-growing regions and take 500 heads from each one. The heads will then be dried, threshed and sent to the Canadian Grain Commission to be tested. “The lab tests will determine the Fusarium strain, if there is one, and the amount of toxin,” said Harding.

He said that past surveys have revealed a pattern. “Fusarium graminearum is easy to find on wheat and corn in the irrigated areas of southern Alberta. That’s not to say it’s wall to wall, but generally speaking, it’s well-established there,” he said. “North of [Highway 1], it’s more difficult to find. So it’s there, but [it] may not be permanently established just yet.”

But lab tests reveal a troubling change in the pathogen itself. Harding explained that, as with any biological organism, Fusarium graminearum is subtly adapting by developing a new chemotype—one that is a more aggressive pathogen and produces a higher level of DON. “One of the biggest reasons this survey is so important is to track these types of changes,” he said.

Of the current survey, Harding said he doesn’t expect to see much change in southern Alberta. “But we’ve been hearing that seed-testing labs are finding higher levels of seed-borne Fusarium graminearum in other parts of the province as well,” he said. “We don’t know yet if that means it’s becoming more common elsewhere, but it wouldn’t come as a terribly big surprise, because the pathogen is certainly capable of expanding to all cereal-producing areas of Alberta. We would like to prevent that, or slow it down as best we can.”

How? Most producers already know the basics—not planting infected seed, using certified seed when possible, and minimizing the movement of infected seed and straw. Harding said Alberta’s Fusarium graminearum management plan is a good place for anyone to start.

Larocque said that his positive DNA tests have increased vigilance on his farm and those of many of his clients. “We’re doing a few more acres of split fungicide applications,” he said, adding that this is a precautionary measure, done without evidence of disease being present. “That shift has taken place with the innovative guys—the producers who aren’t worried about spending a bit more to protect their crop.”

He’s keeping a closer eye on the weather too, as historical rain patterns change. “Moisture leading up to and during flowering is cause for concern,” he said. “And the one thing we all need to get right is residue management and seeding for strong emergence and even crop development.”

“We’ve seen this disease move through Manitoba so quickly there really wasn’t anything anyone could do about it,” said Harding. “But, because it’s moving more slowly here, producers have the time to act and react. They will do what they need to in order to protect their grain.”

WASTED POTENTIAL: Fusarium can cause yield losses, grain downgrading and market rejection of infected grain.

Photo: Canadian Grain Commission
FREDERICK SLADEN, BORN IN
England in 1876, was fascinated with bees as a child. At the age of 16, he wrote his first book, on bumblebees. He became an entomologist and moved with his family to Canada. In the early 1900s, Sladen was the lead apiarist with the Dominion Experimental Farms (now Agriculture and Agri-Food Canada). He was based at the Central Experimental Farm in Ottawa, working with what was in those early days known as the “bee division.”

Sladen helped establish bee-research programs at several of the branch farms, including those in Brandon, MB, and Lethbridge, Lacombe and Beaverlodge, AB. The above photo shows an unidentified employee working with several honeybee hives at the Lethbridge research farm in 1915.

The bee division had research interests in all types of bees, including honeybees, leafcutter bees and bumblebees. Its projects looked at bee breeding, feeding and manipulation; studied bee products; diagnosed bee diseases; and advanced other ways of benefitting beekeepers and improving the overall Canadian beekeeping industry. Work of the bee division first showed beekeepers how to overwinter hives outdoors instead of moving them into root cellars or other protective structures.

While the bee division is long gone, Agriculture and Agri-Food Canada still maintains honeybee research work, headquartered at the Beaverlodge Research Farm in Alberta’s Peace River region.

While numbers vary, the Canadian Honey Council reports that there are about 7,000 beekeepers in Canada, operating about 694,000 colonies of honeybees. Most of those are in Western Canada, and the majority—about 40 percent, or 285,000 of the Canadian hives—are located in Alberta.

In addition to an important honey industry, about half of the Canadian bee colonies are vital to the pollination of Canada’s 12- to 15-million-tonne canola crop. And in Alberta, about 80,000 colonies are dedicated to pollinating crops to produce hybrid canola seed.

Dr. Shelley Hoover, apiculture research scientist with Alberta Agriculture and Forestry, based in Lethbridge, said one part of her wide-ranging research shows that a combination of bee types—honeybees, leafcutter bees and bumblebees—is particularly effective for crop pollination.  

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