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**Derek Mortenson**
Derek Mortensen’s job is to take pictures of other people working. He believes photographs can be a powerful storytelling tool and, since committing full time to photography with Electric Umbrella in 2012, he has been fortunate to collaborate with other professionals to help share people’s stories.
Canada has long had a reputation as a country with open doors. This is what our country was built upon. I hope it continues.

However, federal regulatory changes to Canada’s Temporary Foreign Worker Program mean that the agricultural industry (and other like-minded labour sectors) is going to require out-of-the-box thinking when it comes to staffing shortages and recruiting pitfalls.

After months of refusing to budge on the topic, then Employment Minister Jason Kenney announced in February a one-year bridging program to help those in the process of becoming permanent citizens. This measure, which came into effect on Feb. 1, 2015, still leaves many ineligible to apply.

But the issue of temporary foreign workers (TFWs) speaks to a bigger problem of born-and-bred Canadians spurning primary agriculture jobs in favour of other options, including joining the EI ski team. Meanwhile, thousands of ready and able TFWs are coming to Canada from the U.S., the Philippines, Mexico, Dubai and Saudi Arabia, only to be found anxiously waiting thanks to the changes to this program. They are being denied a chance at a new life for reasons unknown.

Look back at the history books. They document an influx of Dutch migrants who took up permanent stock in Alberta and Ontario throughout the first half of the 20th century—much to the chagrin of local residents. Yet Canada welcomed them and a meaningful labour shortage was addressed.

We should learn from our past. This country’s citizens should continue to welcome other TFWs as they work to find their place in our vast, diverse landscape. Look no further than the Gomez and Hurtado families from Mexico (p. 26) for qualitative evidence of this. After all, if we look back far enough, we are almost all immigrants ourselves. Those who look at Canada as their home will end up being the biggest community supporters and members of our society.

The suggestion that companies are taking the easy way out by hiring TFWs simply does not stand up to analysis. New measures enacted by the federal government mean securing the requisite Labour Market Impact Assessment can take longer than ever, and will now cost $1,000 per person instead of the previous cost of $275.

It’s quite a process and certainly not the path of least resistance when you consider the time, money and effort employers must now put in before they learn if their application was successful.

Although the process is onerous, a distinct labour shortage and a willing foreign worker pool have made it necessary. Instead of lamenting why “Canadians” don’t want these jobs, we should appreciate those hired hands who are willing to work.

Rick Paskal of Paskal Cattle Co. in Picture Butte may have said it best: “They’re the backbone of my company. They’ve taught us a lot—they’ve taught us about the value of relationships, that people aren’t just numbers.”
LABOUR PRESSURES ADD UP

Editor,

These are exciting times to work within the agricultural industry. New innovations, technology and trade deals abound—and Canada is well positioned as a global leader. However, labour shortages are impacting Canada’s agricultural industry and may cause it to fall short of its potential. These impacts include the aging demographic of Canada’s workforce, the highly physical nature of farm work and its rural and sometimes remote locations. All these add up to fewer available workers.

These employment pressures make it especially important for those within the ag industry to focus on the people side of their businesses. Managing human resources (HR) in a strategic and intentional way can ensure the success of new hires and allow farm managers to retain the workers they need for operational success.

The Canadian Agricultural Human Resource Council is currently spearheading two research projects to better clarify and identify farm labour issues so that we may then implement meaningful supports for the industry. Producers and agricultural workers are urged to answer the call for their participation in surveys and focus groups to help us gather the most accurate and up-to-date data for our research.

The Council has also developed many tools and resources to better equip farm managers to be successful in managing the people side of their businesses. The farm labour shortage has been identified as one of the greatest business risks in agriculture today. Therefore, investing in effective and strategic human resource management to find, support and keep qualified workers is important to the long-term health of any operation.

Portia MacDonald-Dewhirst, Executive Director
Canadian Agricultural Human Resource Council
Rolling Forward

Farm meetings ain’t what they used to be

THE FIRST FARM MEETINGS I covered as a young radio reporter in Weyburn, SK were pretty sullen affairs.

Topics such as rail line abandonment, the Crow Rate and income stabilization were standard fare, with passionate statements from farm leaders for and against the forces of change.

There was usually a pot of coffee at the back of the community hall and maybe some baking courtesy of the local United Church Women, but otherwise no frills and often little optimism about the future of agriculture.

Things didn’t get a lot sunnier in the late ‘80s when drought, grasshoppers and trade wars severely depressed farm incomes and launched the era of acreage-based support payments, starting with a $1-billion payout to western Canadian farmers in 1987. I recall one of my farmer friends joking that the key to success in grain farming in those days was owning several mailboxes so he could receive all the government cheques.

The ‘90s brought more tough times than good times, spawning a series of programs and contentious farm meetings to debate their merits. There was the Gross Revenue Insurance Program (GRIP), the Net Income Stabilization Accounts (NISA) and, of course, the wildly unpopular Agricultural Income Disaster Assistance (AIDA) program.

And then there were the massive farm rallies, tractor cavalcades and legislature sit-ins of the late ‘90s as the income crisis forced many farmers to resort to desperate measures. Farming started to look more like a protest movement than a major contributor to the Gross Domestic Product (GDP). In the early 2000s, farmers braved blizzard conditions to attend meetings hosted by a group called “Focus on Sabbatical,” which aimed to drive up grain prices through a collective effort to take land out of production.

Rationalization of the grain-handling system contributed to the negative tone as hundreds of elevators were shuttered in Western Canada, often accompanied by a testy meeting between grain company officials and local farmers. I attended many of these meetings and can attest to the fact they were difficult and often emotional conversations.

Thankfully, the economic picture for grain farming and the mood of farmers in general has undergone a remarkable change in recent years. And with it, a new generation of farm meetings has emerged that focus on the opportunities and bright future for the agriculture industry in Canada.

Since the big turnaround in grain prices in 2008 we have witnessed an increasing focus on farm conferences aimed at farmers as CEOs of small- and medium-sized businesses. Topics include not just agronomy, but also strategic planning, human resources management and new technology.

If you happened to attend FarmTech 2015 in Edmonton in January, you were treated to a lineup of speakers that would rival any elite business forum for professionals or CEOs in any line of work, anywhere in the world. From the CBC’s Peter Mansbridge, to improv comedian Colin Mochrie and “Gen Y Guy” Jason Dorsey, the 1,750 registrants at this year’s sold-out event enjoyed three days of learning, networking and entertainment that is second to none. And I’m proud to say the FarmTech concept is spreading to other provinces. Saskatoon, SK now plays host to CropSphere each January, and the Winnipeg, MB version in February is known as CropConnect.

Many other premium farm conferences have sprung up in Western Canada in recent years, including the Farming Smarter Conference in Southern Alberta, Agri-Trend’s Farm Forum in Saskatoon and the annual FCC Forums. These events are giving forward-looking farmers an opportunity to grow their knowledge and remain competitive in an ever-changing global marketplace.

The transformation of farm conferences over the years has been great to witness. Farmers still have many challenges to deal with in managing their businesses, but the attitude and enthusiasm in the agriculture community has never been better.

Tom Steve is the general manager of the Alberta Wheat Commission.
Keeping up with the Canadians

Tying Funding Dollars to Growing Trade

Money. Whether we’re talking investment in research or market development, the answer to growing Canada’s grain industry comes down to money.

But where will this money come from? With both the federal and provincial governments investing in research and marketing programs, it’s often a matter of knowing what funds are available and how best to access them. Unfortunately, at both levels of government, the application processes are at best administratively burdensome and at worst a bureaucratic tangle. The result? A mind-numbing funding structure that takes significant time away from doing actual work.

Yet a lot of work does get done, with about $602 million spent by the federal government on research and development in the agriculture and agri-food sector in 2012–13. According to the federal government’s ag website, this works out to less than 10 per cent of the $6.8 billion allocated to the sector during that same period, with most going to research and inspection expenditures and program payments.

It’s a lot of money, but is it doing farmers any good?

Over the past few years, we’ve heard a lot of talk about the federal government getting out of primary research in agriculture. The funding gap, it has been suggested, can be met through 3P partnerships (public–private partnerships) or even 4P partnerships (public–private–producer partnerships). These partnerships are about ensuring public program funding has commercial viability. It’s a way of telling farmers and industry to “put your money where your mouth is.”

Although 3P and 4P programs aren’t going to replace federal funding yet, they are already a mainstay of Agriculture and Agri-Food Canada’s Growing Forward 2, which encourages co-funding opportunities under the AgriInnovation, AgriCompetitiveness and AgriMarketing programs. These partnerships allow the federal government’s dollars to reach further, and stringent requirements for innovation, accountability and collaboration mean the work is expected to have real commercial value down the road.

The money speaks for itself: Funding through Growing Forward 2 programs totals $1 billion over five years, with applicants working together as funders and recipients to propose projects that work throughout the value chain.

However, these projects, and others like them, are just the tip of the iceberg. As farmer groups and industry continue to figure out where they see themselves in the future, a fundamental shift is happening just beneath the surface. This shift will determine not only who pays for future research and market development in Canada, but also how they pay—and who decides where the money is spent. Unfortunately, this discussion raises far more questions than it answers.

At the heart of the dilemma is Canada’s role in the world: Will we remain a net exporter of bulk commodities, or of value-added goods? Will we build processing capacity at home, or ship our raw products abroad while processing in Canada continues to decline? Will we create jobs in Canada, or will those jobs go to other countries? Are we the breadbasket of the world, or its baker?

Which brings me to the next question: Are we looking at the right opportunities? Like Canada, many other nations are net exporters of agricultural commodities. Top of mind is Australia, which recently signed the China–Australia Free Trade Agreement (ChAFTA). This agreement puts Canada at a competitive disadvantage in China, but it also sets a clear path forward for our trade-focused federal government. If we want to maintain competitiveness in China, the time is now.

Yet back in Australia, ChAFTA raises other questions. For example, is it Australia’s job to become China’s “food bowl”? Can they develop capacity to truly be China’s first choice for agricultural imports? What level of research investment would it take to ensure Australia’s export capacity could keep pace with China’s population?

We hear a lot about keeping up with the Australians. Fortunately, our government’s strong trade agenda means the conversation is shifting towards keeping up with the Canadians.

Lisa Skierka is the general manager of Alberta Barley.
A SEED-SORTING MACHINE THAT can analyze grain kernels on a chemical level is opening new processing possibilities for Canadian grain farmers.

Swedish company BoMill has created the TriQ, a seed-sorter that uses near-infrared transmission (NIT) to measure the amount of crude protein in grain samples on a kernel-by-kernel basis. This sets BoMill’s machine apart from optical sorters, which analyze the outer colour of a grain sample.

The TriQ can sort grain into three fractions based on its protein content, at a rate of about three tonnes of grain an hour.

The University of Saskatchewan, in collaboration with the Canadian International Grains Institute (Cigi), bought the first TriQ sorter in Canada for a four-year research project at the feed facility in North Battleford, SK. Now into its final year, the project focuses on applications of the TriQ in salvaging grain from fusarium-infested samples.

Using the TriQ’s capabilities could mean a big difference for grain farmers whose fields are infested with fusarium, a fungus that attacks grain heads and leaves shrivelled, often toxic kernels. Since fusarium-damaged kernels have low protein content, the TriQ can tell the difference between good kernels and damaged ones.

“This year, fusarium’s been a killer,” said Rex Newkirk, vice-president of research and innovation at Cigi.

The Canadian Grain Commission recommends that harvested wheat at the elevator containing more than four per cent fusarium-damaged kernels be graded as unusable salvage because of the toxins that fusarium leaves behind. Fusarium policy differs between provinces, and Alberta has a zero-tolerance policy in seed for planting.

“We’ve taken several tonnes of each of the contaminated materials that have been graded salvage in these cases, and salvaged considerable amounts of grain to be resold,” said Tom Scott, research chair in feed processing at the University of Saskatchewan and principal investigator for the research project.

Scott added that with the TriQ it is possible to raise 70 to 80 per cent of a salvage-grade sample to grade No. 2, if not grade No. 1.

The TriQ sorts grain inside a large, spinning steel drum. Grain is poured into the drum via an auger. Centrifugal force pushes kernels into holes drilled into the inner surface of the drum. Those kernels are carried past an NIT sensor, which make rapid predictions of each kernel’s chemical profile at a rate of 24,000 kernels per second. Their protein content determined, the kernels are then ejected into three different tubes and carried out of the machine.

The TriQ can sort wheat, durum and barley, though each grain type requires a different custom-drilled drum.

Currently, the TriQ has been calibrated to measure crude protein, but the technology could feasibly be extended to measure other chemical properties, like starch, said Mary-Lou Swift, a feed quality research scientist at Alberta Agriculture and Rural Development.

The potential for the new technology is promising, but there might be cost-benefit...
CROP DATA REPORTING PROJECT OFFICIALLY ANNOUNCED

Gerry Ritz announces innovative program allowing grain farmers to receive up-to-date grain prices.

A PRICE TRANSPARENCY initiative meant to provide accurate and timely data for the Canadian grain market is officially underway, following an announcement at FarmTech Jan. 28 by Agriculture and Agri-Food Canada (AAFC) Minister Gerry Ritz.

The tool, dubbed Price & Data Quotes (PDQ), will provide daily information on cash grain prices, as well as data on grain movement and trade (www.pdqinfo.ca).

The project was developed by the Alberta Wheat Commission (AWC) and will be led by grain marketing consultant agency FARMCo. Up to $743,000 in project funds will come from AAFC’s AgriRisk Initiatives program.

“We saw this project as an opportunity to take a leadership role in improving price transparency in grain markets in Canada,” said Kent Erickson, AWC chairman.

“We see the PDQ project as strategic and necessary for farmers to compete on the international stage.”

PDQ is meant to fill the information gap farmers and grain companies face now that the Canadian Wheat Board is no longer the single marketer for western Canadian grain. Unlike U.S. farmers, who have had to market their grain as basis traders for decades, Canadian grain farmers have only had a few years to learn about their new marketing opportunities.

Also unlike the U.S., Canada does not have a regularly updated source of price benchmark information for its own farmers.

Most of the data that stakeholders need is already out there, but it’s scattered and often out of date, said Russ Crawford, FARMCo vice-president.

“Price information is only good if it’s current,” Crawford said. “If you’re marketing something, you need to know what the price is right now. And if the prices that you’re seeing in the marketplace are two to three weeks old, they’re basically irrelevant for that purpose.”

Apart from data collected from organizations like Statistics Canada and the Canadian Grain Commission, the project will depend on voluntary disclosure by grain companies. To protect sensitive commercial information, pricing won’t be made available on an individual basis, Crawford said.

“The idea would be to normalize those prices into common grades and qualities, to create averages over areas and zones rather than individual locations,” he said.

The ultimate goal for the project is that it would be self-sustaining, through subscription and advertising.

The project is estimated to take 18 months. Once complete, it will likely go to public tender for a third party to operate, according to John De Pape, FARMCo president.

“This is meant to provide a resource not just to farmers, but also people who work with farmers,” he said.
THE U.K. BAKING COMPANY
Warburtons has selected and registered a new Hard Red Spring Wheat variety, AAC W1876, made by wheat breeders Ron DePauw and Richard Cuthbert of the Semiarid Prairie Agricultural Research Centre in Swift Current, SK. Meanwhile, Canada Malting Company is increasing its contracted acreage for Bentley malt, a sign of its good yield and consistency.

Both varieties are being commercially developed by Canterra Seeds. The Hard Red Spring Wheat was tested by Warburtons in both 2011 and 2012 and is similar in nature to AC Carberry. It stood out because of how well it worked in Warburtons’ baking process, said Adam Dyck, program manager at Warburtons Canada. “It will take our quality up a notch,” he said. “This will go into our normal grist.”

Warburtons sponsored the new wheat through the registration process, and then partnered with Canterra to make it commercially viable for 2015.

“That’s allowed us to go from essentially a few kilograms of seed to many, many metric tonnes of product to be commercialized for spring 2015 planting,” said Brent Derkatch, director of operations and business development at Canterra.

“It’s very exciting. It’s always nice when we can respond to a market demand,” Cuthbert said.

The demand will rise for barley, as well, since Canada Malting Company has decided to grow its Bentley production to more than 40,000 acres.

Bentley was developed in 1996, and wound its way through the variety registration process before being registered in 2008, said Patricia Juskiw, a barley breeder who worked on Bentley for years. Her work followed Manuel Cortez’s initial crossings at the Lacombe Field Crop Development Centre.

“This is a made-in-Alberta success story,” Juskiw said.

Bentley has good, consistent quality and 10 to 15 per cent higher yield than the traditional AC Metcalfe, Juskiw said. She added that its lower enzyme levels are attractive to craft brewers.

“When a company like Canada Malting Company is willing to contract acres of a new variety, that’s great news,” said Peter Watts, managing director at the Canadian Malting Barley Technical Centre in Winnipeg, MB. “That helps with the commercialization gap that we face with new varieties in the industry.”

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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 Duncan Thompson, a grain and cattle farmer from Mannville, to open up his glovebox. Here’s what we found:

1. Road map
2. 1998 Chevrolet truck manual
3. Copenhagen tobacco packaging
4. Nuflor antibiotics
5. ScourGuard vaccine
6. Hypodermic needle for calves
7. Record book
8. Popsicle stick
9. X-Acto knife
10. Alberta livestock manifest
11. Ratchet
12. Pliers
13. Ketchup
14. Electrical tape
15. Nuts and bolts
16. Ian Tyson’s All the Good ‘Uns cassette tape
17. Sweethearts of the Rodeo cassette tape
18. Highland Fling cassette tape

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

Last Issue’s Image

Congratulations to grain farmer Kenton Ziegler of Beiseker. Kenton has won a prize pack courtesy of Alberta Barley and the Alberta Wheat Commission for correctly identifying last issue’s image as a document canister attached to a hopper bin.
SHE SAID, THREE SAID

Pests—be they diseases, weeds or insects—can rob profit from farms during the growing season. Three Hills-area farmer and writer Sarah Weigum talked to three farmers in the off-season about the challenges they had last year and how they are planning to mitigate pest damage in 2015.

With cereals, fusarium is top-of-mind and I’m trying to select genetics that have some resistance. I try as much as possible to avoid back-to-back cereals. I’m asking seed growers if they’ve tested their seed lots for fusarium. I don’t generally use fungicide. I’ve done a number of checks and I’m not convinced of the value. No matter if it’s a fungicide or an insecticide, I’m always aware of the beneficials and I don’t want to take them out. I’m trying to increase sustainability on my farm.

On canola, I’ve seen first-hand that the resistance to blackleg is breaking down. I’m addressing this by growing multiple varieties. I’m asking seed suppliers if they know what races of blackleg their seed is resistant to. If a variety has resistance to multiple strains of blackleg, that’s better than a single strain. I grew three varieties last year and I’m going to grow three varieties again this year. I’m doing a lot of field scouting to see what I have out there.

I worry about resistant weeds. We have Group 2-resistant cleavers and, despite years of spraying, we still have wild oats. Now, we’re using the Group 4 herbicides on cleavers. Anything with fluroxypyr is expensive, but it does a really good job.

We have suspicions of resistant wild oats. We use Group 1 and 2 products for our wild oat control and we try to rotate them, but we still have escapes with both products. This past summer was particularly difficult because we had some heavy rain showers and that caused flooding and second flushes. The crop wasn’t quite as vigorous so that caused weed problems.

Another issue we have is volunteer barley in our wheat, even though we try to have a two- to three-year rotation. One thing we’re looking at next year is growing Group 2-resistant wheat. We’ve been downgraded a couple times for barley in our wheat. Because of zero-till, you do have more volunteer cereal problems.

Last year we had an almost pest-free year, but according to the forecast for this coming year we can expect grasshoppers again. The pheromone traps in our area showed a slightly higher egg count than average. Two years ago, we sprayed a number of fields for grasshoppers. The grasshoppers started in early June and didn’t end until freeze-up.

We are conscious about operator safety when choosing chemicals. We try to walk through the fields every second day in June and July. We make a judgment on the number of grasshoppers we see. One spray usually eradicates them in a field. One field can be grasshopper-free and the next can be polluted with them, and they seem to go more for wheat than canola.

We’re always concerned about blackleg and clubroot. Clubroot seems to be on the edge in our area, so we make sure we get as much soil off the equipment as possible before we go into the next field.
Person: Scott Meers
Place: Crop Diversification Centre in Brooks, AB
Thing: Getting up close and personal with creepy crawlers
Unearthing the nature of bugs through the eyes of Alberta’s top pest expert

By Jeremy Simes • Photography by Rachel Boekel

The Insect world is large, ambiguous and even violent.

There are bugs that prey on valuable crops, insect-o-predators that devour those pests, and critters that simply sit on the sidelines, ingesting the waste created by their counterparts. Despite their different roles, each insect is part of an ecosystem that assists in crop development. In fact, the majority of insects benefit the soil.

Scott Meers has always been fascinated by the relationship between insects and the land. As a young boy, he would rummage through fields, poke anthills and inspect wildflowers on his family farm near Acadia. He turned childhood curiosity into a career as an entomologist with Alberta Agriculture and Rural Development (AARD). His analysis hasn’t stopped, but it has become more technical. Meers works with about 300 different co-operators each year who provide information to him, which he uses to help inform farmers about things to watch for.

As one of AARD’s top entomologists, Meers informs farmers of the season’s pests through live, dynamic maps online. His knowledge is crucial—when it’s time to strike a pest that nature can’t defeat, Meers is ready to advise on how best to handle the vermin.

GW: What inspired you to become an entomologist?
Meers: I’ve worked a number of years with producers. I was a crop specialist and a district agriculturalist before becoming an entomologist. Compared to weed control, we didn’t have a lot of information on insect control to make good decisions. So I really wanted to further explore that.

Insect control is a fascinating area. There’s a lot of cool stuff that happens with entomology. There’s just such an ecosystem in fields. It’s never just the pest—it’s the pest and its natural enemies. There are a lot of factors at play with insects.

GW: Which insects really fascinate you?
Meers: I think every insect is fascinating in its own right. They’re a result of a long line of evolution. My interest comes from questions like, ‘What makes an insect able to find a perfect place to lay eggs? And find a crop that it prefers to attack over just anything random?’ And, ‘How does a natural enemy of a wheat stem sawfly find that sawfly and take advantage of it?’

You can almost look at any insect and say, ‘Wow. How did it work that out?’ It’s just generations and generations of evolution that specialized them to be the way they are. The diversity and sheer volume of insects also amaze me. If we really sat down and thought about it, together insects have a real lot of biomass.

GW: Are they all as bad as people think?
Meers: The vast majority of insects are beneficial or neutral. We only have a handful that are pests. It’s kind of interesting because our first impression of all insects is that they are bad. That’s certainly not the case.

GW: What do beneficial insects do?
Meers: If an insect is a specialist like a parasitoid, it kills off pests. That’s their job. It’s how they make their livelihood: feeding on the pest.

There’s a whole other group of insects that are decomposing organic matter and helping with nutrient cycling. There are also a lot of neutral insects that are just there. We don’t even know what they’re doing most of the time—probably just feeding on organic matter in the soil.

GW: How many problem insects are there on the Prairies?
Meers: We have seven major insect surveys we do each year. One is a grasshopper survey containing several different species. There are several dozen that could cause trouble. But there are about 10 or a dozen species that give us real trouble.

GW: How do today’s pests differ from 10, 20 and even 50 years ago?
Meers: We have some of the same old ones. Wheat stem sawfly was first found in the 1800s in Manitoba. We’ve had grasshopper problems since the time we settled in the Canadian Prairies. So we have everything from those to newer ones like wheat midge, which has been a problem in Alberta for the last 10 years.
And there’s swede midge in Saskatchewan that’s causing trouble. It hasn’t been found in Alberta yet.

What’s different is we’ve seen a new pest every couple years—and that’s a concern. The new pests seem to be introduced from somewhere else, whereas grasshoppers, wheat stem sawfly and birth armyworm are residents of the Prairies.

GW: Do we know how these pests arrive?
Meers: Each one will be different. As soon as we make a generalization about an insect, some other insect comes along and breaks the rule of what we know. That’s a constant with insects: if you think you know everything, then there’s always something that will surprise you.

GW: How should farmers treat insects?
Meers: If they’re costing us money, then we have to take the appropriate action. Now, that may be a choice of the right variety or a spray. But, I’m also convinced we should be paying attention to thresholds, and only acting on problems when they reach or cross those thresholds. More often than not, Mother Nature has something that’s attacking that insect. And that works in our favour, rather than against us.

GW: Have farmers ever inadvertently killed good insects while spraying for pests?
Meers: That’s been well documented, not so much in our field crops, but certainly in crops like apples, where you spray out one insect and cause another one to become more common. We’re suspicious of that happening with a number of insect species in our field crops.

GW: Have you ever had to immediately deal with an extreme pest population that was quickly moving to devour crops?
Meers: Yes. I think timing is critical with insect control. One example is birth armyworm. Throughout birth armyworm’s cycle as larvae, they aren’t causing much economic damage. But when they move up onto the pods and start feeding on them, we have to move very quickly. If we fail to do that, and if there are enough of them, then we can lose crops. And we have seen that happen.

GW: Should you spray for birth armyworm once they are up onto the pods?
Meers: In that case, yes. But we are aware of several natural enemies that do a very good job of controlling birth armyworm in the long term. We promote the message, ‘Spray if you have to, but let Mother Nature look after the population.’

Sprays protect crops. They’re not meant to manage insect populations. If you have to spray for birth armyworm, it means the natural enemies haven’t done their job. Natural enemies control virtually every birth armyworm population. That usually drives the cycle, not our spraying.

GW: Is your research moving in the direction of finding other alternatives to control pests, instead of just using insecticides?
Meers: In my view, pest management has to be integrated. If we can use natural enemies, we do. If we can focus on cultural practices like seeding dates and seeding rates, and growing certain varieties, we will. In moments that require spraying, we will use them. We look at insect management more systematically, rather than just firing insecticides.

GW: How have farmers’ perceptions on sprays changed over the years?
Meers: I think they understand better. We’ve had good research over the years, but we also have more examples that we can show farmers to help them understand. It used to be that we didn’t really know why insect populations cycled more frequently and why they became problems. Farmers also don’t like to use insecticides if they don’t have to. They cost money and have health risks associated with them. They will only use them if it makes them money. Better information usually makes for better decisions, and that’s why we are getting better crops.

GW: What are the next big pests farmers should brace for?
Meers: It could be something that’s not a pest anywhere else in the world that ends up here, and decides to go crazy and devour our crops. We just don’t know what that might be.

Although, swede midge is causing big trouble in Ontario. That could be a problem for Prairie canola, if it comes here. The pollen beetle is also causing trouble for canola in the Maritimes. That could be trouble for us. We watch for that, but you just don’t know what you might stumble across.
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LIFE DOESN’T END AT THE FARM GATE: IT BEGINS

I WANT MORE BRIGHT YOUNG people in agricultural education programs. Not because more bums in seats brings in more tuition money, and not because high numbers makes a university’s statistics look better. I care about getting more students because our graduates all get jobs and because we get calls every week from employers wondering how they can encourage our students to come work for their operation. I care because I believe my country really needs people who understand the breadth and depth of agriculture, who have the training to manage soil nutrients and who think their way through problems. We need people who know how to evaluate corporate claims and public reports trumpeted in media sources that do not differentiate pseudo-expert opinions from informed logical interpretation. I care because the world my own children are going to inhabit will have so many greater challenges than today’s world does—more people, an unpredictable climate and an environment desperately in need of thoughtful, informed stewardship.

My definition of agriculture includes the living soil, the good air and the water running over, in and through it all. Agriculture includes plants from single-celled organisms to complex forests, as well as animals that we manage and those that live independent of us but are affected by our decisions and need us to steward the world we share. My agriculture includes the methods used to grow, harvest, process and store food, fibre and fabricated goods efficiently and sustainably. My agriculture includes the public and economic policies and trends that promote sustainable, effective distribution of goods, minimization of waste, and safe, considerate disposal of those small bits we cannot reuse.

I can unblushingly say that I believe agriculture can save the world. Agriculture can protect and improve the environment, feed the growing population, and improve and sustain a healthy, ecologically sound environment. But I am not sure agriculture will be allowed to do that. We need an informed public to demand that we actually do the work, and demand we bust our butts to discover the ways to make this succeed. We need an informed public choosing to work in the various aspects of agriculture to do the daily chores well, and to make the discoveries and put that knowledge in the hands of those doing the work. And we need an informed public to insist that our policy makers support the education and the work to make it happen in time.

And that is why I say that we need more bright young people studying agriculture. Although enrolment in agriculture programs across the country is growing, there are still more good corporate and on-farm jobs than there are graduates, whether they have diplomas, undergraduate or graduate degrees. For enrolment to meet this demand, we need to replace the current public image of an ag grad—as a dowdy guy with a piece of grass in his mouth, wearing overalls and holding a pitchfork—with the reality of ag grads as independent entrepreneurs with multimillion-dollar operations using the latest GPS technology and “big data” analytical systems. Today’s ag grads are also bankers, pet food nutritionists, soil chemists, remediators of abandoned gas stations and oilfields, developers of healthy foods and wines, international trade representatives and smartphone app designers. We need our young male and female ag grads to be admired and respected by society, and listened to by their peers and our politicians.

We can all help this happen. We need to talk proudly about the breadth and depth of products of agriculture, and how very much our neighbourhoods, our province, our country and our world need these skilled and competent professionals. We need to publicly push our elected officials to support our ability to protect and manage our environment, and to provide higher education. We need to challenge the myths and misrepresentations heard on social media, in restaurants and on talk shows so that the public has the informed perspective to demand effective policies and practices—ensuring we leave this world a place where our children’s children can thrive.

I want more bright young people in agriculture education programs, so they will be the informed citizens keeping our country and our world flourishing and healthy. Will you help?

Mary Buhr is dean of the College of Agriculture and Bioresources at the University of Saskatchewan. Her studies at Agriculture and Agri-Food Canada and the universities of Manitoba, Guelph and Saskatchewan improve sperm fertility for domestic animals.
Opportunity or risk?

WIDER BUYERS’ NETWORK A KEY TO SUCCESS

AS SEEDING TIME DRAWS NEAR, most growers are either contemplating, or perhaps have already initiated, some sales for 2015 production. Good marketing planning demands that sales be anticipated well in advance, and timed in response to market signals rather than forcing grain off the farm when there is a need for movement. However, each decision requires the right balance of reducing the risk of prices falling while still leaving the opportunity to capture higher values if times get better.

This trade-off—managing negative outcomes without forfeiting too much upside—and the timing of when to make a move makes for a challenging decision. Detailed market analysis can really help. Of course, no one has that magic crystal ball, but a thorough understanding of the fundamentals and market structure for each crop on your farm will help provide a sense of market direction and give clues as to which markets have relatively more risk than others.

But it’s perhaps even more important to know those key factors that will influence prices in the coming months, which better allows one to respond when new information enters the market. In other words, in many cases we “know what we don’t know,” but that shouldn’t stop us from anticipating which actions we should take when the unknowns start to become clearer and the markets react accordingly.

For example, we are at a stage in the annual cycle where the global supply and likely demand is fairly well known from last season, but we are heading into the Northern Hemisphere production window. There is a great deal of uncertainty over the size of the upcoming harvest in critically important regions such as North America, Europe and the former Soviet Union. Given that many major crops are reasonably balanced from a fundamental perspective, a swing in production either well above or well below expected levels can quickly make balance sheets bearish or bullish. There’s just no way of knowing how this will play out until we are well into the growing season.

The right way to navigate these decisions will vary by farm. Some operations have less ability to weather a period of poor prices, so the need to protect margins becomes more important. Many farms are required to move a lot of grain in the fall due to limited storage or to fulfill other needs. Spot sales during harvest often turn out to be the most disappointing ones, so the ability to lock in those contracts in advance will usually pay off. Other operations don’t have to deal with either of those constraints, and have the ability and appetite to take on more risk in an effort to achieve higher prices if the outlook justifies it.

Something that can greatly improve marketing and risk management flexibility is the use of futures and options. Securing attractive futures prices while waiting for basis levels to improve, locking in a floor price on more bushels than you would otherwise be comfortable forward selling on a cash contract, or placing some upside price protection to cover some potential buyout risks on existing new crop sales are all strategies that can enhance the options available to the farm. The ability to do these contracts yourself through a futures broker, instead of relying on the contracts that a specific buyer is offering, puts more control in your hands and still allows you to shop around the physical grain for the best deal.

Another thing growers need to consider is being in touch with a wider network of buyers. The last few years have seen an influx of new companies becoming involved in the western Canadian landscape. Each entity offers something a bit different, and it’s worth exploring what’s out there beyond the normal few buyers that you have dealt with in the past. Cash grain brokers can be particularly beneficial as they deal with a wide network of end users, many of whom you might not otherwise know to contact.

Markets are volatile, and it’s not easy to strip the emotion out of selling decisions. Each one is fraught with that tension between wanting to secure what is available and not wanting to leave money on the table. That balance between managing risk and opportunity will vary by farm. But each operation benefits by doing detailed planning well in advance, having a thorough understanding of the fundamentals for each of its crops, anticipating how to respond to new information that changes the landscape, and maintaining as much flexibility as possible while still covering the farm’s needs.

Jon Driedger is a senior market analyst with Farmland Marketing Solutions.
EW PEOPLE OUTSIDE OF THE RESEARCH community know Ron DePauw’s name, but chances are you have been eating the fruits of his labours for decades—maybe even your whole life.

Amongst science nerds, this 71-year-old is a living legend, a sort of Wayne Gretzky of wheat breeding. When you look at his career stats, it’s easy to see why. For much of the past two decades, 40 to 55 per cent of Canada’s total wheat crop has been made up of cultivars produced by DePauw and his team.

Throughout his decades-long career as one of the world’s most influential grain breeders, DePauw has amassed a staggering list of accomplishments, both public and private. Now, on the verge of a retirement that will be chock full of everything from judo to ballroom dancing, DePauw says wheat, as a major part of the human diet, is here to stay.

Formally, Ron DePauw, PhD, is the senior principal wheat breeder at the Semiarid Prairie Agricultural Research Centre in Swift Current, SK.

“This institution is responsible for agriculture in the semi-arid Prairie strip, which covers the brown soil zone, a lot of the dark brown soil zone and a lot of the black,” he said. “This counts for about a third of the arable crop land, and we’re developing farmlands and genetic products that will tolerate the drought and heat conditions.

“In this environment, water, drought, heat, high winds and moisture deficit are the primary limiting factors of production.”

Similar climatic conditions are found between 45 and 60 degrees latitude, in both the Northern and Southern Hemispheres. As such, scientific breakthroughs made in Swift Current have been put to use everywhere from Siberia and Kazakhstan to Argentina and New Zealand.

Born in Kamsack, SK, in 1944, and raised on a farm in Treherne, MB, DePauw showed an early interest in agriculture, participating in his local 4-H seed club. He studied undergraduate science at the University of Manitoba before heading on to master’s-level studies in botany and philosophy at St. Louis University in Missouri.

It was during his master’s studies that DePauw first heard of, then enthusiastically embraced, the Japanese martial art of judo.

“I started doing judo back in ’62, before everyone in this
room was born.” he said, provoking a chuckle from his students at the local dojo. “My roommate saw the advertisement for the class and asked me if I wanted to try. I’ve stuck with it ever since.”

Ghrandozz Aguilar, an 11-year-old Grade 6 student, has been studying judo under DePauw for five years and holds the rank of green belt.

“Ron is my favourite teacher,” Aguilar said. “He just teaches me well, and has taught me a lot. He always helps me with the figures that I have to do for tests.”

Leanne Marchand’s husband and son are both students at the judo club, as well. She said DePauw is very active both physically and in the community, and that the kids look up to his quiet authority.

“I like him very much, and my son has a lot of respect for him and looks up to him quite a bit,” she said. “When Ron is around, my son Sebastian takes his judo a lot more seriously.”

Judo is a defensive art, DePauw explained, as he showed off an impressive arsenal of hip throws, holds-downs, arm bars and strangles. While he said his joints are a little creaky, he shows no sign of slowing down.

“Judo means ‘the gentle way,’” he said. “It’s not force against force; you use the force of the other to immobilize and defeat him.”

DePauw graduated with his master’s and, with two academic degrees under his judo belt, he thirsted for adventure. This desire led him to Eastern Africa, where he settled for three years in Kenya to assist farmers in that country in coping with semi-arid conditions similar to those found back home in Saskatchewan. DePauw was dispatched to a plant breeding station in the town of Njoro, where the Canadian International Development Agency was administering a project.

It was there that he had a chance meeting with a dauntless and independent-minded Dane who would change his life. Her name was Elsa Marie, and she was also in Kenya doing development work. She was on a short visit to Njoro, but after that day the two were rarely apart—50 years later, DePauw returns home to eat lunch with Elsa Marie every day at noon.

After returning from Kenya, DePauw received his doctorate in plant genetics from the University of Manitoba, and settled down in Swift Current.

Since 1993, Ron and Elsa Marie DePauw have been honing their skills in their favourite joint pastime: choreographed ballroom dancing.

“We do both choreographed ballroom dancing and social dancing, from the Peace River region in the north to San Diego and Mexico in the south,” DePauw said. “We dance in bars, casinos and clubs.”

Watching these two turtledoves engaged in complex dances like the jive, foxtrot and rumba is something to see. They laugh and swing as they perform intricate moves like the fencepost, cheek-to-cheek and hook turn. Sometimes they make a misstep, but it’s rare and usually gets some razzing out of Elsa Marie.

“That’s the key to a good marriage,” Elsa Marie said after getting her toes trampled. “Let the man lead.”

Unlike casual dancing, choreographed ballroom dancing is a precise set of moves that must be studied and practised. There are clear parallels with judo, giving some insight into the methodical mind that has had such a tremendous effect on Canada’s food system.

Over the years, the biggest change DePauw has seen in wheat breeding has been the relentless march of technology. He said innovations such as computing, biotechnology and especially near-infrared technology were indispensable in his work.

“The amount of data we can handle now is incredible, just incredible,” he said.

Perhaps the largest feather in DePauw’s multi-plumed cap is the development of Canadian Prairie Spring, a whole new class of wheat that overcame the negative correlation between grain yield and protein content. Another of his
cultivars, AC Barrie, became the most commonly grown wheat in Canada between 1998 and 2005, while another, Lillian, was the most grown variety for four years. The list goes on and on.

During our extended interview, I couldn’t resist asking DePauw for his opinion on gluten, the much-maligned wheat component blamed these days for numerous dietary ailments in influential books like *Wheat Belly* and *Grain Brain*.

At its simplest, DePauw said, gluten is a combination of two wheat proteins that are highly prized in cooking for their elastic properties.

“They form a protienaceous starch matrix, so you can make pizzas with it, or stretch it this way and that to make noodles,” he said. “When you put yeast with it, it helps trap carbon dioxide bubbles to make bread rise.”

Humans have eaten gluten since wheat was first cultivated in the Fertile Crescent nearly 10,000 years ago, DePauw said, and largely without incident. And while the wheat in gluten hasn’t changed much since then, the ways we use it have.

“We are not consuming wheat as it was made, or processed even, 100 years ago,” he said. “Industrial bakeries didn’t exist 100 years ago, and processed food ready to obtain in grocery stores is a very recent phenomenon, really in the last 50 or 60 years.”

During food processing, gluten is added to virtually all ready-to-eat products, which take advantage of its physical and elastic properties. It is even added to things like potato chips, DePauw said, and many other products that haven’t traditionally contained any wheat at all.

“Finding gluten in all these food products is something new,” he said.

DePauw shared the story of Winnipeg-based food scientist Nancy Ames, who has been experimenting with new recipes for barley tortillas. In small batches, they would hold their round shape, but Ames ran into problems when producing them on a larger scale. When winding through the production line, DePauw said, centripetal forces would cause them to break.

“So these poor little tortillas, when they’d been going around the corner, the outer side would speed up and tear,” he said. “So to solve the problem, they put a little gluten in it.

“So the long and the short of it is, since so much processed food is using gluten in the manufacturing process, the gluten load in our lives has increased,” he explained. “It is a natural component, but we are just eating so much of it.”

So what are DePauw’s top three all-time favourite wheat-based foods?
He squirmed briefly, his mind hard at work analyzing the abundant options. “Elsa Marie’s homemade bread. Then it would have to be Elsa Marie’s homemade pizza.”

He paused for a long moment before Elsa Marie chimed in with mock offence, reminding him in her precise European accent of another one of her culinary specialities. “Ah yes, Elsa Marie’s homemade pasta,” he said with the broad grin of one well fed.

An obvious theme can be discerned about the eating habits in the DePauw household: They eat real, honest-to-goodness, homemade food.

As a scientist, DePauw sagely reserves judgment on the whole gluten issue, saying more research is needed. He cites concerns about processed foods that need more research, but despite these concerns, DePauw is certain that wheat is here to stay. Grown in virtually every country from 60 degrees north to the southern tip of Argentina, and from sea level to 9,000 feet, wheat is an omnipresent feature of human life.

“Wheat is accounting for about 20 per cent of the calories consumed globally by humans,” DePauw said. “It’s like rice, one of the major food crops. It’s a very good source of protein, well balanced in the amino acids, and can be manufactured into a great diversity of products.”

Wheat is also highly convenient, he said, evidenced by the fact that sandwiches and burgers are the go-to convenience foods in the West, while wheat-based noodles play that role throughout Asia.

The big question is whether there will be enough wheat to go around, DePauw explained. “The world population will be over nine billion by 2050, and to feed everyone, we will have to increase food productivity by 60 per cent—off the same or less arable land base.”

Throughout the Middle East, Northern Africa and Central Asia, there are about one billion people who consume wheat as their primary food source, he said. And in these areas, he added, climate change is causing deserts to expand by kilometres each year, cutting deep into grasslands where wheat is grown.

Meanwhile, in Canada, the cloud of climate change may have a silver lining. “There is an opportunity for us in Canada,” he said. “There are some projections that yes, there will be much more wild weather, but the growing seasons will lengthen and some of our areas to the north will be more suitable for arable crops.”

DePauw said the real macroeconomic challenge will be stoking the economies of these poor, climate-change-stricken countries so people who are currently living on an average of $2 per day can buy Canada’s bumper grain crop.

“We’ve got to get them into the economic sphere so they can purchase our wheat,” DePauw said. “I mean we can’t give it away, it’s not sustainable.”

While this may seem an insurmountable challenge, if it is not solved, the realpolitik of empty bellies will make the world an even more unstable place, he said. “If we want to bring an end to what’s going on in the Middle East, we’d better be addressing that income inequality. If we don’t address it, people are going to be doing things with guns.”

“You’d almost think I was a Quaker or something,” he added with a laugh.

Though his retirement looms, DePauw’s schedule is rapidly filling up with requests to share his expertise. “My official retirement date is going to be March 20,” he said, “but I’ll then be going down to Mexico to give some lectures, and I’ve been asked to become more involved in the Science, Spirituality and Health Research Institute in Calgary.”

For his tremendous achievements, DePauw was named to the Saskatchewan Order of Merit and is a fellow of both the Canadian Society of Agronomy and the Agricultural Institute of Canada. In 2004, he was named to the Order of Canada, being praised for his work shaping the western agricultural industry.

“He was the lead architect of an important new class of wheat,” his citation reads. “Characterized by their high protein content and resistance to disease, these cultivars rank among the world’s best and have opened new markets for farmers in Western Canada.”

A learning moment with research trainee Jacqueline Menzies.
CHANGING THE RULES
RISTO HURTADO REMEMBERS HIS FIRST VISIT TO Southern Alberta’s Paskal Cattle Company in 2006. The young veterinarian had travelled from his home in Monterrey, Mexico, to explore the possibility of pursuing a new life in Canada as a temporary foreign worker.

“We came in May,” recalled Hurtado. “It wasn’t green yet, but there was no snow at all. [Company president] Rick Paskal told me, ‘All this is going to be white in winter.’ I couldn’t even picture that in my head.”

Nine years (and nine Canadian winters) later, that snowy landscape has become home to Hurtado, his wife and their two young sons (the younger one born in Lethbridge). This past May, the family made the final step in their transition by becoming Canadian citizens. In the meantime, Hurtado has risen to the position of Paskal’s general manager in charge of grain buying.

It’s a familiar story on the Canadian Prairies. In recent years, temporary foreign workers have played an ever more prominent role in the labour market, including the agricultural sector. But recent changes to Canada’s Temporary Foreign Worker Program (TFWP) may turn stories like Hurtado’s into the exception rather than the rule.

When Hurtado came to Alberta, he left behind a steady job with a Monterrey food processor. His girlfriend (now his wife) had been living in Manitoba with a Canadian friend and regularly coaxed him to follow her lead.

One day, when a delegation of Canadian farmers visited the processing plant in Monterrey, an understanding boss tagged Hurtado to give them a tour.” He knew I was exploring this option.” The group included Paskal. At the end of the visit, Hurtado gathered his courage and told Paskal he had been considering a move to Canada. “Rick said, ‘Give me a call and we’ll talk.’”

In the months that followed, Hurtado took Paskal at his word, peppering him with endless questions about life in Alberta.

“I asked him about the schools. I asked him: if you could buy peppers there. I asked him how much meat costs. I guess Rick got sick of my questions. He said, ‘Just come and visit, and see it for yourself.’”

Over the duration of his initial two-year TFWP permit, Hurtado had enough time to work his way through the bureaucratic hoops and achieve permanent resident status. Future foreign workers may not be so lucky.

On June 20, 2014, the federal government announced significant changes to the TFWP, promising “a balanced set of reforms to ensure that employers put Canadian workers first.” Major changes included an increase in the Labour Market Impact Assessment fee paid by employers, to $1,000 from $275 for every requested temporary foreign worker position; caps on the percentage of “low wage” temporary foreign workers an employer may hire (“low wage” being interpreted as any wage falling below the provincial median); and a reduction in the duration of work permits, to one year from two years (full details at www.esdc.gc.ca/eng/jobs/foreign_workers).

In February, news broke that the federal government had introduced bridging measures for TFWs who came to Canada in 2011 or earlier. This is a one-year extension for TFWs seeking
permanent residency in the province through the Alberta Immigrant Nominee Program. In certain instances, those applications can take up to two years to process.

Asked if he would make the jump to Canada in today’s circumstances, Hurtado didn’t hesitate.

“I had a good job in Mexico and I had just bought a house. It wouldn’t have been worth it financially to come and just explore for a year.”

Eduardo Gomez, a more recent immigrant and Hurtado’s colleague at Paskal, finds himself caught in the shifting regulatory landscape. Gomez knew Hurtado from Monterrey, having attended the same veterinary school a couple of years behind him, and hoped to follow the same path to Canada. His dream hit a snag last year when he was called into a meeting at Paskal’s office and learned that the TFWP changes might affect him and his family.

Since then, Gomez has made progress in his paperwork.

“Things are going better,” he said. “But my wife and I were scared. We didn’t know what we were going to do if the government sent us back to Mexico.”

Gomez’s boss, Paskal, would be as sorry as anyone to see the young veterinarian sent back home. Over the years, Paskal has brought in around 50 temporary foreign workers to help staff his various operations, including a cattle feedlot with a 65,000-head capacity. Of those, all but one has stayed in Canada. Paskal insisted the TFWP is essential to his thriving businesses.

“It’s absolutely everything,” he said. “The people we’ve brought up are agricultural people. Most of them come out of Mexico. They’re university educated; a lot of them are veterinarians. They’re willing to work in agriculture. They see this as their employment for years to come. They’re not looking, the
minute they get here, for a high-paying job in the oil business. They’re of huge value to the agricultural economy in Canada.“

Paskal bristled at the suggestion that companies like his use foreign workers to avoid paying proper wages.

“We treat them the same as Canadian domestic employees. There’s no difference. They have the same entitlements to health care, to benefit programs, to bonuses. Everyone is treated the same here.

“It’s not that they’re cheaper—that’s not the issue here,” he said. “They’re committed to being in agriculture.”

Paskal insisted his company does everything it can to attract workers from within Canada. He described one recruiting drive that took him to Port Hawkesbury in Nova Scotia.

“Not one person showed up at the job fair,” he said. “Not one. And they’ve got 18 per cent unemployment there.”

With the tightening of the TFWP, Paskal doesn’t believe Canadian workers will fill the void.

“I can try to pay them a competitive wage that keeps me in business,” he said, “but I can’t hold a gun to their head and make them move. So, then, what am I supposed to do? As I sit here today, we’re 10 or 15 people short.”

While Paskal frets about his company’s welfare, he also worries about the foreign employees who depend on him.

“They’re the backbone of my company. They’ve taught us a lot—they’ve taught us about the value of relationships, that people aren’t just numbers. It’s probably one of the best things I ever did in my life, to be honest with you, to bring foreign workers.”

Paskal Cattle is just one company, but its labour frustrations are echoed in the agriculture sector throughout the Prairies, said Portia MacDonald-Dewhirst, executive director of the Canadian Agricultural Human Resource Council (CAHRC). Domestic labour is in short supply these days, and most people who are looking for work aren’t looking at agriculture.

“Agriculture requires people to work in atypical positions,” she said. “It’s not a desk job within a building, with a nine-to-five kind of schedule. It’s physically demanding work, often in rural settings, with a 24/7 kind of operational schedule.”

In 2012, the CAHRC worked with the Agriculture and Agri-Food Value Chain Roundtable to launch a Labour Task Force to help craft strategies for dealing with labour shortages in the agriculture industry. In March 2014, the task force released its Agriculture and Agri-Food Labour Action Plan (www.cahrc-ccrha.ca/labour-action-plan), which calls for a twin strategy to increase the supply of labour while also improving the knowledge and skills of workers in the industry.

“The plan needs to be collaborative in its approach, and a partnership between industry and government. We need to work together on this,” said MacDonald-Dewhirst.

Recent changes to the TFWP—increased fees, shortened work permits, caps on numbers—haven’t helped, she said.

“Things were hard already, and now they’re even more difficult.”

She also sees people in the industry struggling to absorb the implications.

“They’re still trying to get their heads around it. Some elements have been communicated well, and others are still a little fuzzy in terms of how the plan will roll out and evolve.”

At the same time, MacDonald-Dewhirst would like to see better public awareness about the benefits Canada has seen through the TFWP.

“It’s a challenge when only the negative stories are published, because there are so many positive stories about the win-win nature of the program.”

Above all, said MacDonald-Dewhirst, time is of the essence.

“We’re already in shortage. What’s going to happen five years from now?”

MacDonald-Dewhirst would get no argument from Scott Entz, general manager of Cargill’s meat processing facility in High River, AB.

“We’re about 300 people short now,” he said.

Labour scarcity makes it impossible to carry on business as usual, Entz explained.

“The first thing you do is you work more overtime, which starts to impact our competitiveness because our costs are higher.”

Meanwhile, the company ends up having to reduce its emphasis on value-added products.
“When you bring an animal in, you have to process the entire carcass,” he said. “We can’t just put it back and wait until next week. If I don’t have enough people, I just have to do products that are simpler, so that I can still get the product through. The end result is we don’t collect as much value from that carcass.”

Entz estimated that Cargill has brought in 1,100 foreign workers to High River over the years, the vast majority of whom have become permanent residents or citizens. “And if you annualize the turnover, we’re probably about six per cent for that group—which, for our industry, is just outstanding.”

Like Paskal, Entz values the commitment displayed by the foreign workers. “This is a career for them. Just being honest, for most of the Canadian folks we hire, working on our operation isn’t necessarily a career for them.”

Al Dooley, labour recruitment specialist at Alberta Agriculture and Rural Development, agreed that agriculture can be a tough sell for potential employees. “Young people have lots of options, and in some ways we should be happy about that,” he said.

Dooley doesn’t see the solution coming entirely from within Canada’s borders. “If you get into economies like Alberta and Saskatchewan, where you’re approaching full employment, how will we deal with this? It’s a complicated issue, for sure.”

While everyone worries about the economic impact, many in the industry feel we should also spare a thought for the individuals most affected by changes to the TFWP: the workers themselves. “These people come here, moving their whole families, with a really good work ethic,” said Bryan Walton, CEO of Alberta Cattle Feeders’ Association. “They come here to seek opportunities. They will help us sustain our rural communities in a time when we see the rural populations declining. If you look at it that way, we’re providing a service to the federal government. We’re not displacing Canadians.”

In return, Walton believes we owe our foreign workers a fair shot at a new life. “The insinuation that these people came here knowing it was temporary is disingenuous,” he said. In his view, we shouldn’t bring people to Canada under one set of assumptions and then change the rules and send them packing. “That is uncivil. This is the human side of the story, and it’s uncivil what’s happening. That should not happen in our country.”

Nevertheless, Paskal said companies are being forced to do just that. Processors who are already short of bodies are having to send people home in order to comply with new caps on foreign workers, he claimed. “We’re the political pawn in the centre here. And our government is going to force good, legitimate businesses out of this country. I can’t think of another word for it but ‘bull—.’”

In the meantime, Hurtado and Gomez are hopeful for their families’ future, and grateful for the opportunities they’ve had through the TFWP. With every passing month, said Hurtado, Alberta feels more like home. He has even joined the Rotary Club, although he admittedly doesn’t make every meeting. “I wish I had more time and I was a better Rotarian,” he said.

Gomez and his wife have two sons, and a young daughter born in Canada. “My eldest kid is playing hockey—we don’t have that in Mexico,” he laughed. “I was a coach last year of football—sorry, soccer! We’re trying to get involved in the community, to feel like this is our home.”

He’s also struggling to remain patient as he navigates his way towards permanent residency. “Every country has their own rules,” he observed ruefully, “but some rules are changing every six months.”

Gomez is also proud of the value he has brought to Paskal Cattle. “Each time that I see Rick Paskal, I tell him, ‘Thank you.’ And he says, ‘No—thank you.’”
From flag to head.

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ERALD FINSTER AIMS FOR A SEEDING RATE THAT will produce about 22 plants per square foot on fields he’s seeding to Xena feed barley on his Peace River region farm.

Working with an Alberta Agriculture and Rural Development (AARD) seeding rate calculator, he seeds barley at 2.5 bushels per acre (with Xena that’s about 119.5 pounds of seed per acre) to achieve that 22 plants per square foot stand.

“Over the years, we’ve found that to be the optimal seeding rate for our farm,” said Finster, who, along with wife Esther and three sons, Kyle, Kevin and Josh, crops about 10,000 acres near Valleyview in the southern Peace River region. While he has seed batches tested for germination, he follows the bushel measure when it comes to seeding. It is based on the recommended 1,000-kernel weight formula. Barley samples of his bin-run seed weigh out at 43 per 1,000 kernels. The germination rate of seed batches is usually about 95 per cent and he estimates a 20 per cent seed mortality.

While seeding rates vary depending on soil zones, type of barley and growing region, as well as seed weight and quality, Finster is still within recommended AARD guidelines.

“We have nice, heavy seed and aim for that 2.5 bushel per acre seeding rate,” he said. “Over the years, we have found those rates are putting the target number of seeds in the ground and producing a good stand of barley.”

Finster follows a similar approach with wheat—targeting 25

Keep seeding rates up, and seed early

BY LEE HART • PHOTOS BY GERALD FINSTER AND JOHN O’DONOVAN
plants per square foot. For example, this spring he’ll be seeding Stettler wheat weighing 39 grams per 1,000 kernels at a rate of 120 pounds, or two bushels per acre, to achieve the desired plant count.

“We can target a seeding rate, but the one unknown is the survival rate,” said Finster. “And you don’t know that until the crop comes up. We plan on about a 20 per cent mortality. We find with barley that, if we can seed it a bit later into nice, warm soil, it comes out of the ground fast and is very competitive with weeds. And the later seeding date works with barley because it matures faster.”

Most years, Finster plans to seed peas and/or wheat first in the spring, canola is seeded at about the mid-point, and oats and barley are seeded later.

“And the other thing we’ve found with barley is that it prefers lighter sandy loam and peat-type soils,” he said. “On the heavier soils, if you get too much moisture, barley doesn’t like to have wet feet, so it grows better on well-drained soils.”

RECOMMENDED SEEDING RATES

Finster’s approach to a barley seeding rate is right in the ballpark of what most researchers recommend for barley and, in fact, most cereal crop production—keep the seeding rate up so you’re achieving 22 to 30 and perhaps even 40 plants per square foot. That might be considered a heavy seeding rate or high plant count, but those numbers will increase the ability of the crop to compete with weeds and also help produce more even crop maturity.

According to Harry Brook, AARD crop specialist at the Ag Info Centre in Stettler, producers in the black soil zone should be targeting 25 to 30—even up to 40—plants per square foot under optimum growing conditions. The plant count should be somewhat less in the brown soil zone where moisture is oft en the limiting factor.

“Farmers should start with a target plant population in mind,” said Brook. “And of course, that will vary with soil and moisture conditions. Producers should aim for the higher rates in the black soil zone, and most years, although not always, lower rates in the brown soil zone because traditionally it is drier.”

Brook recommended farmers determine a seeding rate by using the 1,000-kernel weight formula (the calculator is available on AARD’s website).

“There is such variability in crops,” he said. “One batch of seed could weigh 60 pounds per bushel and another one 48 pounds. And in that heavier bushel you are going to get fewer seeds. So that 1,000-kernel weight will eliminate guesswork.”

Brook said that while barley tillers out less than wheat, those tillers mean the crop will have different stages or later overall maturity.

“We’ve had more cool, wet springs that have delayed seeding, which means crops are later maturing,” said Brook. “And on the other end, there is a chance of an early killing frost in September. So farmers need to do what they can to shorten crop maturity and reduce the risk of running into frost damage.”

John O’Donovan, a research scientist with Agriculture and Agri-Food Canada (AAFC) in Lacombe, said the results of 21 site years of research looking at malt barley seeding rates show that targeting 300 seeds per square metre (about 30 seeds per square foot) appears to be the optimum rate for malt barley yield and quality.

“One of the issues has been that maltsters are looking for kernel plumpness, so many farmers were using lower seeding rates to increase plumpness,” said O’Donovan. “But we found if the seeding rate was too low, bad things happened.”

For one, lower seeding rates increased the number of non-uniform kernels. The more uniform the kernels, the more malt quality is improved. Also, at lower seeding rates, there is more tillering and later maturity.

“Overall, we found that by going from 200 seeds per square metre to 300 seeds per square metre, we achieved higher yields, more uniform kernels and
improved malt quality,” said O’Donovan. “There was a slight reduction in kernel plumpness, but we felt the uniformity of the seed was more important.”

The research also showed that at the 300-seed rate, protein was slightly lower, which is more desirable in malt barley. And by going from 200 to 300 seeds per square metre, crops matured two to three days sooner, “which can make a huge difference when quality is the key and frost can quickly damage a crop,” he said.

O’Donovan said it should be noted that his team’s research plots were direct seeded with an air seeding system calibrated for 300 seeds per square metre. With that system, they targeted 70 per cent emergence, or about 220 to 230 viable plants per square metre (about 22 to 23 plants per square foot).

“So if you have a seeding system where you are expecting 95 per cent emergence, for example, then you would need to adjust your seeding rate so you end up with about 220 to 230 plants per square metre,” he said.

Going beyond 300 seeds per square metre didn’t help with malt barley, said O’Donovan. At 400 and 500 seeds per square metre, yield was significantly reduced, likely due to lodging, and the economics of higher costs associated with the higher rate didn’t pencil out.

In southern Alberta, Ross McKenzie, a longtime AARD research scientist now retired, said his research with crops produced under irrigation showed the optimum seeding rate for malt barley was 17 to 24 plants per square foot (he targeted 180 to 250 seeds per square metre).

For feed barley under irrigation, it was slightly higher at 19 to 33 plants per square foot (200 to 350 seeds per square metre). And for Hard Red Spring Wheat under irrigation, 19 to 28 plants per square foot (200 to 300 seeds per square metre).

McKenzie said that while every seeding system is different, he figures on an average emergence of between 60 and 80 per cent.

“With most seeding systems, if you are targeting a one-inch seeding depth, for example, you’re going to get some seeds at half an inch depth and some at two inches,” said McKenzie. “So you have to adjust the actual number of seeds planted to achieve the targeted viable plant count.”

Looking at wheat production in dryland farming, McKenzie said some of his last research published in 2013 showed the optimum seeding rate for soft white wheat in all soil zones was 300 to 400 seeds per square metre (roughly 30 to 40 seeds per square foot), which should translate into about 21 to 28 plants per square foot.

With Canada Prairie Spring Wheat on dryland, seeding rates ranged from 275 to 350 seeds per square metre (28 to 35 seeds per square foot), or a plant count of 20 to 25 plants per square foot in the dark brown soil zone, and up to about 350 to 450 seeds per square metre or 25 to 32 plants per square foot in the black soil zone.

McKenzie’s research papers, entitled Optimum Seeding Date and Rates for Irrigated Grain and Oilseed Crops and Dryland Agronomic Management of Soft White Spring Wheat and Canada Prairie Spring Wheat in Alberta, can both be found on the AARD website: http://www.agric.gov.ab.ca/app21/inforpage?cat1=Crops&cat2=Cereals.

SEED AS EARLY AS POSSIBLE
Along with the seeding rate, McKenzie said another important factor for farmers to consider is the seeding date. Generally, researchers and crop specialists suggest an early seeding date is better than a late seeding date.

“Obviously, you can’t seed every crop on the same day,” said McKenzie. “But, research shows yield is reduced by about one per cent per day for each day the crop is seeded after May 1.”

His research showed flax was the least affected by delayed seeding, losing about 0.6 per cent yield per day after May 1, while canola was the most affected, losing about 1.7 per cent of yield for each day seeding was delayed after May 1. Most of the cereal crops were in the range of one to 1.3 per cent per day.

“The earlier you can get your crop seeded without risk of damage, the better,” said McKenzie. “You may not want to seed canola on April 15 due to the risk of frost, but you may want to consider getting your peas, wheat and barley seeded in late April if conditions are suitable.”

McKenzie said farmers should look to get their highest-value crops seeded first (to protect yield potential) and then schedule the rest of the crops later.

“If you can’t seed until May 1, and canola is your highest-value crop, then it would be best to seed canola first,” said McKenzie. “Then follow that with wheat and then barley. Since flax, for example, has the least potential for yield loss due to later seeding, you could seed it last.”

According to Brook, temperature is an important factor when it comes to seeding early.

“You don’t want to be seeding into damp soil that is only 1°C,” he said. “You can lose a lot of seed to rot under those conditions.

“As a minimum, soil needs to be 5°C or better at time of seeding. If you can seed into a warm, moist seedbed, and seed shallow, that crop has an excellent chance of getting off to a good start. You might be able to seed peas at 4°C, but overall it is best to wait for at least 5°C before seeding.”

O’Donovan had similar recommendations following his research with malt barley.

“In most areas we found that seeding early—seeding before the middle of May—produced the better yields,” he said. “The exception to that might be the Peace River region, where

“Research shows yield is reduced by about one per cent per day for each day the crop is seeded after May 1.”

–Ross McKenzie

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450 seeds per square metre or 25 to 32 plants per square foot in the black soil zone.
waiting a bit later, until after the middle of May, produced the best results.”

O’Donovan attributed that simply to cooler growing conditions in the Peace region earlier in the year.

“For most of the Prairies, except for the Peace region, earlier seeding of malt barley produced higher yields, improved quality characteristics and lower protein,” he said. “With later seedings, the protein increased.”

OATS ARE SPECIAL

Oats require a heavier seeding rate than either wheat or barley, according to Bill May, an AAFC researcher at Indian Head, SK.

Extensive research has shown producers should target a minimum of 300 live plants per square metre (about 30 per square foot) to produce an optimal, high-yielding stand that matures evenly and competes against weeds.

“Oats have more variability than any other cereal crop we grow,” said May. “So to determine the proper seeding rate it is really important to determine the weight of your oat seed batch using the 1,000-kernel weight formula. And we have found there is more difference between seed lots than there is between cultivars. So you just can’t say that, because you grow a certain variety, the seeding rate should be this amount. You need to calculate that 1,000-kernel weight for each seed lot.”

Comparing it to a bushel measure to achieve 300 live plants per square metre (three square feet), May has seen bushel measures vary from 2.2 to four bushels per acre, depending on the seed batch.

May said a live plant stand of about 30 plants per square foot produces even maturity for farmers planning to straight combine the crop. And that stand density provides fairly good suppression of what he described as “a light wild oat infestation.”

He explained that, if producers are facing a heavy wild oat infestation, they need to bump the seeding rate to 350 to 375 live plants per square metre (about 35 to 38 plants per square foot).

“When it comes to controlling wild oats in oats, seeding rate is about the only option farmers have,” he said. “They need to establish a proper plant stand to compete against the weed. There is no real adverse affect in going to the higher seeding rate other than increasing the cost of seed.

“If farmers have a lower plant count with oats, they are really going to lose ground against wild oats. That 300 to 350 live plant count is really quite effective at knocking back wild oats.”

According to May, an earlier seeding date is better than a later seeding date—both in terms of yield and crop quality.

“It depends what the producer is after, but if they are looking for a high-yielding, milling-quality oat with a higher test weight, an earlier seeding date is best. It is best to seed oats in the first half of May rather than in late May or early June.”

He said research shows as much as a 50 per cent yield loss between oats seeded in mid-June versus oats seeded in mid-

May, and test weight drops significantly with the June seeding, as well.

“And that recommendation will vary, too, depending on what part of the province or Prairies you are seeding in,” said May. “The test weight increases as you seed from south to north. Test weights are going to be higher in areas with cooler, moister growing conditions. For example, and I emphasize this is usually the case, if you seeded oats on the same day at Indian Head and then 100 miles north at Ituna, the oats at Ituna would have a higher test weight because of the ‘usual’ cooler growing conditions.”

May said another way to look at it for farmers in the southern Prairies is that it’s best to seed oats in early May to protect test weight because of the usual hot, dry conditions during the growing season, whereas farmers in central and northern areas could probably seed oats the second or third week of May and still achieve very good test weights. 🌽

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OPTIMUM: An ideal stand of AC Metcalfe malt barley. As part of John O’Donovan’s work, it was seeded at a rate of 300 seeds per square metre (three square feet), with about a 70 per cent emergence rate producing 22 to 23 plants per square foot. Photo courtesy of John O’Donovan.
Short-line railways link rural communities to opportunity

BY TAMARA LEIGH • RAIL MAINLINES GRAPHIC DATA COURTESY OF TRANSPORT CANADA
LONG AFTER THE FALL OF THE GRAIN ELEVATORS, the rail lines that served them continue to criss-cross the Prairies, connecting rural communities and their businesses to main-line railways. While Canada’s two Class 1 freight carriers, CN and CP, abandon lines to focus on moving high volumes through core transportation corridors, farmers are among those leading the charge to buy old branch lines and build a network of short-line rail companies to keep Prairie grain and other commodities moving.

A “short-line” refers to an independent rail company that operates over a relatively short distance. They are important players in moving freight from remote areas and rural communities to interchanges where they can be picked up by the main-line railways and moved to market. Across the Prairie provinces, there are now 20 short-line railways covering more than 3,900 kilometres of track and moving thousands of producer grain cars and other goods each year.

In an industry fixated on moving high volumes at high speeds to international markets, short-line rail companies offer personalized service, higher returns to producers and less time on the road. They are hyper-local businesses in an increasingly global world.

“Our size is our advantage,” said Perry Pellerin, CEO of Great Sandhills, SK Railway (GSR), which runs 198 kilometres of track from Sandhills to Swift Current, SK. “If you’re a producer who wants to load a car, you can call and talk to a short-line—it’s communication that you would never get from a Class 1. We are easier to deal with, and we provide better information and service to our customers.”

Modern short-line railways emerged from changes to the 1996 Canada Transportation Act that allowed the two national freight carriers to stop operations in parts of their network by selling or leasing unprofitable, low-volume lines. Facing the spectre of losing not just the service but also the infrastructure that connected them to other markets, some communities rallied to buy the branch lines and operate them on their own. Between 1996 and 2009, the number of short-lines in Canada boomed from 12 to 50.

“What emerged was almost a transitional plan where the lines were transferred to a group of people who believed they could make them viable, but it was contingent on the idea that the grain elevator companies could change the economics and make small crib elevators viable as well,” explained Marcel Beaulieu, rail industry analyst with Quorum Corporation, the group mandated by the federal government to monitor the Prairie grain handling and transportation system. “Unfortunately, the grain companies had an agenda to get rid of the smaller elevators. As the elevators closed, a lot of folks tried to replace elevator loss with producer car sites.”

Unfortunately, the grain companies had an agenda to get rid of the smaller elevators. As the elevators closed, a lot of folks tried to replace elevator loss with producer car sites.

With their fortunes tied to decisions in a system beyond their control, today’s short-line operators are nimble and diversified—traits shared by anyone who has succeeded in the grain sector.

“The ones that have survived have community coming together to try to save the short-line as a first step,” said Beaulieu. “On top of that, they have also developed producer car-loading capacity, recasting themselves as integrated commercial concerns that have rail car loading and grain gathering on their line.”

Alberta’s only short-line, Battle River Railway, is an example of the kind of community-based collaboration and “get it done” work ethic that characterizes much of the short-line industry. The former CN branch line runs 90 kilometres from Alliance to Camrose, and the operators have consistently increased their volumes and diversified their business since buying the line in 2010.

“We initially bought the line to maintain a piece of transportation infrastructure, and then realized it had the ability to generate business and keep money in our communities,” said Battle River Railway chairman Ken Eshpeter, who farms near Forestburg. “When we move 3,000 cars, we keep $2 million in our community that otherwise would have left.”

When CN announced plans to shut down the line in 2008, Eshpeter led the effort to secure interest and investors to buy the line. They formed a new generation co-operative in 2009, and started negotiating with CN. New generation cooperatives are increasingly common producer-led value-added enterprises that have a closed membership, and use a system of delivery rights and obligations to encourage business loyalty and provide a form of vertical integration.

“We talked to every farmer in our catchment area in their kitchens over coffee, and sold 153 A-shares, 463 B-shares and 122 C-shares. In total, we raised $3.5 million through share sales, then put that together with financing to buy the line,” he said.

Now entering its fifth year, Battle River Railway is a bare-bones operation focused on delivering personalized service to the farmers and other shippers on the line—something that depends entirely on car allocations from CN and the tariffs that CN sets for hauling goods from its interchange.

“Running the rail line is straightforward—talk to farmers, quote prices, organize the grain and get it loaded. It’s negotiating with CN to get the cars, get them moving and get them back that’s a challenge,” said Eshpeter, adding that Battle River Railway moved 2,100 cars last year. “If we could get CN to respond positively to our need for cars, within a year and a half...”
we could be moving 5,000 cars per year, but they don’t want to go there.”

The relationship with the national rail providers is a delicate point for all short-line railways. Regardless of their capacity or aspirations, they are totally dependent on the main-line carriers for rail car supply. It is the Achilles heel of the short-line operation. The issue hit a peak in early 2014 when the federal government set minimum targets for CN and CP to get the backlogged 2013 harvest moving.

“When the government stepped in, the main-line carriers favoured their own high-throughput elevators where they could get more commercial bang for the buck instead of servicing short-lines,” Beaulieu observed.

For their part, CN and CP acknowledge the service that short-lines provide.

“We proudly work with short-line partners so we can move goods to almost any North American location, even beyond the reach of our own rail network,” said CP spokesperson Jeremy Berry. “In 2013, we moved approximately 35,000 carloads with connecting short-lines across the Prairies.”

In the past year, both companies have issued new rail car allocation policies that limit the number of cars that a short-line can request within a certain time period. What neither company offers in its policies is any commitment to service standards for car allocation or delivery to the short-lines, making planning difficult and limiting business opportunities.

At the federal level, the minister of transport and the minister of agriculture and agri-food have asked CN and CP to submit plans outlining how they intend to improve services for producer cars and short-line railways for the remainder of the 2014/15 crop year. Both CN and CP have submitted the requested winter plans, which are being reviewed, according to Transport Canada.

Gerald Gauthier is the Railway Association of Canada’s (RAC) vice-president of public and corporate affairs and says the biggest regulatory risks to short-line rail companies are unintended consequences. The association advocates to the federal government on behalf of the entire industry, including Class I and short-line freight, passenger, urban and commuter rail.
“People see rail issues, but don’t necessarily think of all of the players. We are pushing for a short-line lens,” said Gauthier, pointing to the Fair Rail for Grain Farmers Act and the Order in Council intended to clear the backlog on the 2013 harvest as an example of creating one problem while trying to solve another. “The legislation that was trying to address this issue might seem to settle the issue for farmers, but doesn’t factor in impact on other commodities and short-lines. As a result, the short-lines didn’t get as many cars as they needed,” Gauthier explained.

The RAC is also working with government on changes to regulations requiring upgrades to public crossings, safety regulations and insurance requirements. “We are trying to explain to government how to make regulations in a way that will not damage the operators,” he said. “We have to remind them to help smaller railways because they don’t have the same resources as the big railways, and government should facilitate that. It’s not for the railways, it’s for the shippers.”

Across the Prairies, each province has taken a different approach to short-line railways. Alberta offers no funding or support for short-line purchases or track maintenance. In Manitoba, the government has provided loans to help companies buy branch lines and get established. In Saskatchewan, a government program provides cost-shared funding to offset the cost of rail maintenance.

“Saskatchewan’s network of short-line railways is vital for getting grains to market and an increasingly important factor in oil transport, as well,” said Nancy Heppner, highways and infrastructure minister and minister responsible for the Saskatchewan Grain Car Corporation. “The short-lines are a Saskatchewan success story and we’re proud to continue our investment in railway infrastructure so they can continue to be viable into the future.”

Saskatchewan’s policy recognizes the social, economic and environmental value of keeping industrial traffic on the rails and off the roads. While taxpayers pay the costs of maintaining roads and highways, rail companies pay the costs of maintaining tracks on their own. Based on cargo capacity alone, one car on the rails keeps at least four trucks off the road. Since the program started in 2008, Saskatchewan’s short-line industry has grown to 13 from eight companies and added over 900 kilometres of track to the network.

“When railways were first built in Saskatchewan, the towns and villages were built with them. You can see the decline where the branch lines have gone and all those towns have dried up and gone away,” said Roger Gadd, general manager of Great Western Railway (GWR). “We are keeping our part of southwest Saskatchewan alive and vibrant just by being there.”

Spread out along 495 kilometres of track, GWR is the largest short-line railway in Saskatchewan. With over 40 siding locations, it services the most producer loading sites in Canada, as well as two crude oil loading facilities. When CP operated the line, it employed no more than six people; today, GWR employs 26 between its head office in Shaunovan, its maintenance shop in Assiniboia and at each of the producer sites along the line.

It’s not just the Saskatchewan provincial government that sees the value. Like many short-lines, GWR’s shareholders include farmers, private citizens, regional government and municipalities on the line. That kind of investment creates a stability of its own.

In southern Manitoba, Lake Line Railway has knit together a diverse portfolio of business opportunities and is strengthening the local value chain as a result. The 50-kilometre stretch of track between Gimli and Selkirk was purchased from CP in 2012, just as grain marketing shifted away from the single desk.

“We did the business plan in the CWB era when there was a $1,000-per-car advantage to selling grain to the line company, but by our starting date CWB was gone,” said Randy Penner, president of Lake Line.

However, he explained that the end of the single desk created an opportunity for the short-line to engage with U.S.-based grain buyers. “We are fitting more into niche or smaller markets that larger companies aren’t interested in serving,” Penner explained. “There are smaller companies buying from individual farmers that are more grain-specific, loading three or four cars and sending them south to a specific mill. We’ve created activity in the area by having a short-line.”

Lake Line isn’t just feeding markets to the south. The railway also works closely with the Diageo Distillery in Gimli, the only distillery in the world that makes Crown Royal. Lake Line collects, cleans and delivers fall rye from farmers on the line to the distillery, and hauls tankers of the finished product to the main line destined for the bottling plant.

“We open the doors to other companies to be competitive, or for niche marketing like the fall rye,” said Penner. “It’s a small market, but if we can create a need for it in this area, farmers will grow it.”

Despite the challenges, optimism is pervasive in the short-line industry. As environmental and social pressures push for more efficient, sustainable options, the outlook for rail continues to improve.

“Short-lines have proven that we can develop a plan that brings long-term viability to a line, and hope to communities,” said GSR’s Pellerin. “We see a lot of things come and go, but the rail lines have been around for 100 years, and will likely be around for 100 more.”
SPIRITS ARE HIGH ON WESTERN AUSTRALIA’S Glenora Farm. Carlia and Frank Nield own and operate the 7,400-acre grain and sheep operation near the town of Hyden, 300 kilometres east of Perth. It’s late December 2014, and the grain harvest is wrapping up with a predicted yield slightly higher than the regional average—and the sweeping China–Australia Free Trade Agreement (ChAFTA) signed November 17 is predicted to boost the country’s farm economy.

“ChAFTA is certainly a vote of confidence in the agricultural industry,” said Carlia Nield. Though Australian farmers view the deal positively, she said enthusiasm among producers is tempered by the hard work of remaining viable. The flat, dry, western agricultural belt produces high-quality grain, as well as cattle for domestic consumption. However, like much of Australia, it has experienced 10 years of extreme drought. Unlike distant eastern Australia, the state of Western Australia lacks the processing mills and abattoirs necessary to produce value-added exports, and its export-dependent grain farmers receive slightly lower returns than their eastern counterparts.

Though Nield was reluctant to predict great things, she noted that, in advance of ChAFTA, private investment in just such agricultural infrastructure has been taking place in Western Australia and across the country.

“If there is new investment in western Australian agriculture, this allows investors to produce an export-quality product,” she said.

Under the two-year-old government of Prime Minister Tony Abbott, Australia pushed for the completion of ChAFTA, which had remained at a low boil for a decade. In contrast, the Canadian government under Stephen Harper has aggressively courted global free-trade deals since 2006. The Canada–EU Comprehensive Economic and Trade Agreement (CETA) is now in the final approval stage, the Canada–Korea Free Trade Agreement (CKFTA) has been ratified and the Trans-Pacific Partnership (TPP) is a work in progress. Given Canada’s largely unassailable record in securing trade deals and China’s burgeoning hunger for natural resources and agricultural products, Australia’s scoop is notable.

Now that one of the country’s main agricultural trade rivals has gotten this leg up, will Canada forever be forced to play catch-up as a competitor in the Chinese market?

“Twenty years ago, Australia wasn’t even thinking about China. We were in the lead, and had very strong relations with China.”

–Ken Nelson

“Twenty years ago, Australia wasn’t even thinking about China. We were in the lead, and had very strong relations with China,” said Alberta business development consultant Ken Nelson, president of K L Nelson Associates. “Canada was doing things in China—all in agriculture—but it seems today Australia just kind of ‘vroomed’ past us on the freeway. The
Australians made a bigger commitment to seize new trade opportunities with China.”

In 2013, Australia–China two-way trade hit AUD $150.9 billion (CDN $154 billion), with Australian exports accounting for AUD $101.5 billion (CDN $103.6 billion) of that. ChAFTA will eliminate tariffs on 85 per cent of Australian exports to China when it comes into full force in four years. While tariffs will vanish outright on barley and processed products such as fruit juice and honey, most agricultural tariffs will be removed in stages. Tariffs of up to 20 per cent on dairy products will be removed over four to 11 years, while 12 to 25 per cent tariffs on beef will drop over a nine-year period. China imposes generously low wheat tariffs within a quota unaffected by the deal.

While Australia scored big with ChAFTA, Canada hasn’t been idle in Chinese trade relations. In 2013, our agri-food exports to China were valued at $5.2 billion, an increase of 3.6 per cent over 2012. In September 2014, Ottawa signed a foreign investment promotion and protection agreement with China, as well as currency and trade deals in November worth up to $2.5 billion.

Alberta trades heavily with China, accounting for nearly 30 per cent of total Canadian trade with that country. China is also the province’s second-largest market for agri-food exports, which were valued at $1.5 billion in 2013, a decrease of 8.2 per cent from 2012. In 2013, Alberta Agriculture and Rural Development (AARD) led a government relations and trade mission to China that included the formal renewal of a memorandum of understanding between AARD and the Chinese ministry of agriculture.

“Alberta’s products are marketed in a competitive, globalized marketplace,” said Alberta Minister of Agriculture and Rural Development Verlyn Olson. “We know that we need to continue to expand market access for our products. We will continue to participate in trade and investment missions to build on our relationships and open new doors for our products.”

Doug Miller farms grain and cattle between Acme and Crossfield. He spent some time working in Australia and subsequently married an Australian, and his family now visits his brother-in-law’s central Queensland farm every couple years. He cited Canada’s 2013/14 winter grain handling woes as the country shooting itself in the foot on international trade. While ships lined up at port in Vancouver awaiting rail deliveries of Prairie grain, Australia experienced no such difficulties.

“We’re geographically challenged, whereas in Australia, they’re either under drought or massive flood,” said Miller. “They face challenges like we do, but once their grain is grown, getting it to port is relatively easy.”

Nelson agreed that certainty of supply gives Australia an advantage that complements its close proximity to China, which is sometimes compared to Canada’s easy trade access to the U.S. market. He said Australia also has a modern agricultural regulatory platform and the ability to act quickly and decisively while leveraging all of its advantages at once.

He pointed to the aftermath of the melamine poisoning scandal that rocked the Chinese dairy industry in 2008. Australia presented China with a ready solution—buy Australian milk. Marshalling public and private resources, Australia is now building dairy capacity that didn’t previously exist to supply China with safe, high-quality milk.

ChAFTA is also predicted to increase two-way investment. Chinese investment in Australian agriculture was already taking place prior to the deal, said Howard Morris, managing director of SeedServ, an agricultural consulting firm located in the township of Mooloolaba, north of Brisbane. Though he noted Australian ownership cannot exceed 49 per cent of any given seed enterprise
in China, and such restrictions aren’t reciprocal, Morris is pragmatic.

“There are bigger issues we’ve got to worry about. We need the money.

“I think ChAFTA’s going to be very important for Australian agriculture,” he added, predicting it will not benefit Australia’s large, traditional commodities such as grain, cotton and sugar so much as non-traditional products. Barley is the only grain he said will benefit significantly. Dairy producers will win big with increased exports of milk products, technology and dairy cows—likewise horticulture, fruit, vegetables and wine. The meat industry, especially beef, will benefit substantially in live cattle shipments, which have already grown.

“A lot of the benefit is going to come on quite gradually,” Morris qualified.

“The tariffs are dropping, often over a decade. Over that time, the industries will develop as needed.”

Steve Larocque, owner of Beyond Agronomy, is an Alberta farmer and crop advisor. He has studied Australian agriculture and compliments the savvy crop management of the country’s farmers.

“I’ve never seen efficiencies anywhere in the world like I have in Australia,” he said. He believes this is because Australian farmers face extreme weather instability without the benefit of government crop insurance. “When you don’t have that backstop, you get real creative real fast.”

He put ChAFTA in perspective, comparing it to the CETA deal.

“We have to be careful saying the Aussies have one-upped us, because what they don’t have is what we would consider a free trade agreement; it’s concessions from the Chinese government on import tariffs.”

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In our natural resources. If China wants natural resources and we’re selling lumber, coal and petroleum to them, why not leverage that and get a better deal on market access, whether that’s for grain or new BlackBerrys,” he said. “Let’s make sure we’re not being shortsighted in giving them what they want without bringing all the other commodities on board.”

Nelson added that Canada needs to understand what other market players such as Australia are doing, and keep pace. And though he noted it’s difficult to overturn market advantages (such as those Australia has gained with ChAFTA), once they’re established, the competitive advantage gained isn’t necessarily permanent.

Moreover, Canada must work hard to maintain existing markets, Nelson concluded.

“We have to make sure they’re serviced at all costs, even if it means breaking even. Once a supplier or a country changes source, it’s really hard to break back in. Part of this commodity is customer service. How are we making sure that customer can go nowhere else?”

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This Alberta Wheat Commission initiative has been made possible through the AgriRisk Initiatives program under Growing Forward 2, a federal–provincial–territorial initiative, and is supported by FARMCo.
Tech prep a priority

PROPER MAINTENANCE IS A KEY TO SUCCESS

THERE IS NOTHING WORSE THAN having all your iron prepped and ready for action only to be stalled by glitchy electronics.

Almost every late-model seeder and sprayer relies heavily on electronic monitors, controllers and GPS-enabled tools. It’s a double-edged sword: The accuracy and flexibility afforded by programmable electronics is amazing and we wouldn’t want to be without it. The downside is that we are dead in the water if the electronics fail. The expression “you can’t put a wrench on it” is painfully true. Technical fixes during busy times can take longer to resolve than replacing a part or welding up a break.

Like it or not, our equipment is largely driven by technology and this will continue. Getting ready for spring must entail more than greasing and replacing wear parts. The electronic monitors and terminals are like the central nervous system of your equipment. If you talk to reps from technology companies and equipment retailers, they offer similar advice to help avoid delays due to electronic failure.

Tip No. 1 is to start early—as in now. The difference between iron and electronics is that electronic components may go into storage working fine, but you can’t assume they’re good to go come spring. Cold, corrosion and condensation wreak havoc with connections and circuit boards in monitors and terminals. Wherever possible, bring all electronic components in from the cold during storage.

To start prepping for the 2015 growing season, make sure all monitors and GPS equipment are loaded with the most up-to-date software. Most newer monitors and controllers allow you to run a diagnostic protocol that will identify any issues—be sure to take advantage of this after the latest software has been installed.

When it’s time to reinstall components in tractors, sprayers and combines, start an inspection at the battery and work your way back to the components, checking power wires for wear and integrity. Corrosion at battery terminals is a common problem and bad ground connection is one of the most prevalent issues in the spring. If you are not already using di-electric grease and contact cleaner at all wire harness connections, it’s time to start. Do the same inspection on the wire harness from the monitor back to the implement.

Turn on all electronic components and make sure you have power, function and a GPS signal where applicable. For guidance equipment, make sure antennae cables are plugged in—this is a common mistake. Shake the antennae—if there is water inside, it’s a problem waiting to happen. Make a pass out the lane or in the field and then set the guidance to send you back along the same path. Tires should line up with the tracks from the first pass.

Electronic controls are often blamed for performance issues that are actually mechanical. For variable-rate drives, flow controllers and seeder section clutches, make sure they are working and not seized before you blame the controllers.

Data collection and transfer is an important part of new electronics. It’s a good idea to pull up an existing file from last year to make sure the system is working properly. Create a new dummy field/file and push to the appropriate destination so you can confirm data transfer.

Maintaining a relationship with the companies that sold you the technology is critical, especially if you’ve just upgraded or added new technology for the upcoming season. For after-market gear, understand how you access support. Is it via the retailer or through head office? For major equipment manufacturers, know whom you will talk to at the dealership on tech issues.

If you had any problems last season, discuss with tech support to resolve them well before you head to the field. Be sure you have all contact information for tech support loaded into your smartphone so it is super easy to get help when you need it. If you have a tablet, load all relevant websites and user manuals to the device so it is at your fingertips in the cab.

If you want to improve your skills in this area, take advantage of seminars and training resources that are becoming more popular in the off-season.

If all of this is outside your comfort zone, most major manufacturers and after-market technology companies offer pre-season service so that the job gets done properly. Some companies offer a full-service package where, for an annual fee, they will do a pre-season inspection and tune-up and then provide any service required throughout the season.

Peter Gredig is a corn, soybean and wheat producer based near London, ON. As a partner in AgNition Inc., he is involved in developing mobile products and strategies for agri-business, producer organizations and farmers across North America.
Earlier to rise

BENEFITS TO BUMPING UP SEEDING DATES

Researchers across Western Canada confirm that early seeding pays benefits. The easy part is to get the crop going. The more sugar available, the higher the likelihood that it will be transported into the developing seeds of the plant. The longer you wait, the more it costs you. So the goal is to find every possible way to stretch the growing season—while understanding that it is imperative that the crop is harvested before frost and snow.

Researchers have suggested a number of reasons for the success of early seeding: early seeding can result in earlier maturity, reducing possibility of losses due to early frost; early crops get a faster start and tend to be able to compete well with weeds; early-season moisture may be used more effectively; pest infestations may be lower; potential physiological damage due to high temperatures during flowering may be reduced. There is also the practical benefit of spreading out the workload by getting started earlier and varying the field operations (seeding, spraying, harvesting) in comparison to other crops sown later.

So how can you make the calendar work in your favour to maximize the growing time available to your crop? There is no doubt that fall-seeded crops make a lot of sense. Having the plant starting to grow in the field without the concern of doing a spring seeding operation provides a big advantage in stretching the growing season. However, the history of winter wheat has been hit or miss in Western Canada. Statistics Canada is predicting a 900,000-acre decrease from original projections due to the late 2013 harvest, which prevented late-summer/fall seeding. Work has been done on winter peas and fall-seeded canola, but there is still much more to do. Private companies have been marketing polymer-coated seeds that degrade over the winter and position the seed to germinate as early as possible in spring.

A less complicated level of innovation is selecting a crop that can either tolerate cold soil during spring planting or significant frost tolerance at the end of the growing season. The obvious course of action for producers is choosing crops that have a higher tolerance for low soil temperatures (such as peas). If producers are locked in to a specific crop type for rotational or marketing reasons, then there are also significant variations among cultivars that are suitable for early-season planting due to both cold tolerance and maturity. There are equipment choices that can make early seeding easier, since getting on the land in wet years can be a major issue that reduces available growing time.

What are the “next generation” options for extending our growing season in Western Canada? Research groups such as the Rodale Institute have investigated the long-term productivity of perennial cereals and oilseeds. In the future, perhaps we will be able to seed just once a decade, rather than pulling out the seeder every year. Data from Michigan State showed that perennial wheat produced grain yields of 50 per cent of annual wheat and perennial rye yielded 73 per cent of annual rye grain yield. Perennial cereals may show yield changes over multiple years and may be subject to the buildup of diseases and insects over time. There are already significant biomass benefits in perennial systems, but more work needs to be done to develop cultivars that partition resources in grain.

How do we extend our growing season and increase crop yields? There are many choices now, and there will be more in the future, to maximize the production capacity of our fields. Dr. Stan Blade is Dean of the Faculty of Agricultural, Life and Environmental Sciences at the University of Alberta.

DURING A RECENT VISIT TO CHINA, I had the opportunity to visit the Beijing Drum Tower (“Gulou”). This tower was originally built in the 13th century, during the reign of Kublai Khan, as the official time-keeping device for the people of Beijing. In addition to the daily keeping of time, the officials of the Drum Tower also had the responsibility of guiding the farmers of the region on timing of planting, crop development (with specification on grain-filling and other developmental stages), as well as harvest. I began to think about how we address the timing of crop production in Western Canada, and how research could assist in extending the growing season to produce higher yields.

If we agree that the goal is to increase crop yield, then it makes sense that the longer the plant is allowed to grow, the greater the amount of photosynthesize (sugar) is produced within the plant’s plumbing. The more sugar available, the higher the likelihood that it will be transported into the developing seeds of the plant.

One way of extending the growing season is seeding early. The easy part is to confirm that early seeding pays benefits. Research across Western Canada on wheat, barley, canola, peas, flax and oats all shows that delayed seeding results in lower yields. There are some examples to the contrary, but the vast amount of research shows increased yield due to early seeding. The longer you wait, the more it costs you. So the goal is to find every possible way to stretch the growing season—while understanding that it is imperative that the crop is harvested before frost and snow.

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Dr. Stan Blade is Dean of the Faculty of Agricultural, Life and Environmental Sciences at the University of Alberta.
Election buzz

Ag at the forefront ahead of federal vote

Election season is coming.
In Ottawa, the talk around the Hill is all about the federal election. The same may be true of Alberta with a possible provincial election after the shocking defection of nine Wildrose to the PCs last December. As the campaigns gear up, Alberta farmers need to prepare for election season just like preparing for seeding and harvest. The first step is to think through what agriculture issues need focus today and what will be on the horizon tomorrow.

Don’t wait until the issue becomes reactive. We can turn to Ontario to learn this lesson. Due to an activist offensive, Ontario farmers have concentrated significant effort and investment working on best management practices to reduce bee exposure. Environmental protection is, in fact, why the majority of farmers and Canadian industry chose the seed treatment route rather than aerial spraying.

None of this seems to matter, however. “Sound science” reasoning is waning as an effective argument in many political circles. This puts a century of scientific advances in agriculture, which have been beneficial to the environment, at risk.

Within industry circles, what is happening in Ontario is referred to as the “thin edge of the wedge”—and justifiably so. An Ontario Beekeepers’ Association news release headline states, “Ontario becomes the first province to act on neonicotinoids.” The David Suzuki Foundation seems to be working in tandem with the Ontario Beekeepers, proclaiming Ontario to be “the first government in North America” to legislate a neonic ban. In other words, this is not a “one-off” for them, other provinces and governments will be targeted in the near future.

In December 2014, like the ghost of Christmas past, the United States Environmental Protection Agency was requesting comments on the benefits of neonicotinoid seed treatments on soybeans. This is the same process that Canadian farmers were asked to participate in with our own federal government’s PMRA in December 2013. American farmers, however, are moving to protect modern agriculture methods with an interesting proactive policy approach that warrants consideration. They are moving to legislatively preserve the “right” to use modern agriculture technology such as seed treatments. North Dakota farmers have done this through a “right to farm” amendment in their state constitution that protects a producer’s right to use scientifically proven and approved agricultural practices. American farmers feel this will give them state protection from special interest groups.

Could this concept be applied in Canada, federally or with agreeable provinces that still accept sound science principles?

This is something to think about because Alberta farmers also use neonic seed treatments for crop protection with no negative reports. This proactive approach has broader positive implications in that it could provide a covering from an activist agenda on usage of scientifically accepted agriculture practices.

The idea of advocating for modern agriculture raises more questions: How do we move our messages forward during election season? How do we make sure that issues such as protecting producers’ “right to farm,” agriculture labour shortages, risk management and transportation remain up front and centre during an election?

Simple letter writing from associations or individuals can be effective. Disseminating an “association platform” of ideas to each of the political parties in the form of an open letter released to the media is a good way to get quality ideas on the books.

Followup is needed in the form of individual farmers and associations meeting with candidates. Plan to attend upcoming public meetings and public political debates. And have good questions ready to highlight a proactive agriculture agenda.

If producers are prepared for an election, our industry will reap the rewards.

Janet Krayden works for the Canadian Agricultural Human Resource Council and lives outside Ottawa. Originally from a mixed farm near Acme, she specializes in agriculture communications. Follow her on Twitter, @CdnAgvocate.
Chem-resistant kochia

NEW STUDY ON GLYPHOSATE-RESISTANT WEED

THE TASK OF UNCOVERING NEW methods to manage Western Canada's first glyphosate-resistant (GR) weed is under-way in Lethbridge and at the University of Alberta. The weed is called kochia, a plentiful, large and competitive pest that emerges early in the growing season, said Bob Blackshaw, a weed scientist with Agriculture and Agri-Food Canada (AAFC).

Kochia can be a factor that contributes to yield reduction, and Blackshaw explained that tackling the weed economically benefits producers.

"Kochia is a common weed in southern Alberta. If it’s not controlled, then farmers will lose on their yields, if they have it.”

In order to combat the problem, Blackshaw’s leading a project aimed to determine the seed production potential, the timing of seed development and the environmental conditions when GR seeds are inactive compared to kochia seeds that are susceptible to glyphosate.

The project also seeks to identify cost-effective herbicides that can be used to control GR kochia. That will be done through pre-seed burndown applications, chemfallow treatments and in-crop herbicide applications.

The team is testing herbicides on wheat, canola and field peas alongside kochia to better understand how those crops react to the sprays.

The GR-kochia problem came to light in 2011 when Blackshaw received a call from a farmer who had trouble controlling the weed on his field. After Blackshaw and a team of researchers investigated three fallow fields in the Warner-Milk River area, they confirmed a number of weeds were glyphosate resistant.

Thereafter, Blackshaw, with fellow researchers Linda Hall and Hugh Beckie, surveyed 309 sites for GR kochia in Alberta. Thirteen of those sites—seven in Warner County, five in Vulcan and one in Taber—had kochia with glyphosate resistance.

It didn’t stop there, either: 10 other GR-kochia sites were found in Warner prior to the survey. Independent farmer testing in 2012 also found an additional nine sites, including four in Forty Mile County, one in Lethbridge and one in Cypress County. Another survey by Beckie in 2013 found GR kochia in 17 of 342 sites in southern and central Saskatchewan and two of 283 sites in southern Manitoba.

Despite those small numbers, there’s potential for the number of GR kochia sites to increase, explained Beckie, an AAFC research scientist who specializes in herbicide-resistant weeds.

“Based on Group 2-resistant kochia, it was everywhere in less than 20 years. So because glyphosate is used more often than Group 2 ever was in terms of numbers of acres and intensity of use, I would expect that to be the same situation if not quicker for GR kochia.”

The interprovincial spread of GR kochia is largely due to seed dispersal from mature plants tumbling across the landscape. Pollen transmission also causes the scattering of the weed, said Beckie.

The team jumped on the GR-kochia problem immediately, “thanks to the three original growers who contacted us,” Beckie explained. “We knew we had to quickly survey the Prairies to see the extent of the problem, and we will follow that up with regular surveys to see how fast it’s spreading.”

Glyphosate was introduced in 1974, and has become the most widely used herbicide in the world, according to a report by Blackshaw.

“Initially, glyphosate was mixed with other herbicides. However, when glyphosate went off patent in the 1990s and became cheaper, then it was actually easier not to mix it with another herbicide,” Blackshaw said.

That largely contributed to the development of GR kochia. Through the survey, the research team found farmers were using only glyphosate to control their weeds on fallow.

He recommended that farmers fight back with integrated weed-management practices such as tank mixing, crop rotation and high seeding rates.

“That could increase producers’ costs, but it pays off in the long run.”

Western Canadian Wheat Growers vice-president Stephen Vandervalk echoed the importance of best management practices.

“It’s important to tackle GR kochia if you have it,” said Vandervalk, who farms near Fort Macleod. “We’re always looking for a new herbicide. That’s not the fix, though. It’s about breaking down resistance, not just relying on new modes of herbicide control.”

The team will do one last field test in 2015, and the project will conclude in 2016. ❖
Blends do the trick

IMPROVING FEED BARLEY YIELD WITH GOOD AGRONOMICS

FARMERS WILL SOON KNOW WHAT combinations of advanced agronomic practices will give them the best bang for their feed-barley buck.

A project led by Alberta Agriculture and Rural Development agronomy research scientist Sheri Strydhorst looks at how feed barley responds to combinations of intense agronomic methods—nitrogen fertilizer, plant growth regulators and foliar fungicides—compared to standard management practices. The goal is to give farmers recommendations on how they should manage their fields under all types of conditions.

The project grew out of the fact that the 10-year average barley yield in Alberta is 60.4 bushels per acre, which is well below barley’s potential, Strydhorst said.

“We really want to bump up that average through this study, but also make producers money by doing so.

“Many research projects just look at how one agronomic practice impacts agronomic performance of a crop. But farmers don’t just use one practice, they combine many. So what our research does is try to mimic what farmers do, and I think that is what is so exciting about it.”

To bump up the 10-year average, the project tested 64 advanced management practice combinations on the variety Amisk. In a second experiment, an intense, advanced agronomic management combination was administered to 10 varieties: Amisk, Breton, Busby, CDC Austenson, CDC Coalition, Champion, Gadsby, Muskwa, Vivar and Xena.

The team chose Amisk as the recipient of all 64 combinations because it’s relatively new and has good yield potential, Strydhorst said.

“If we want to target 180 bushels per acre, we are optimistic that Amisk will get us there.”

The team chose to test the 10 varieties because “the industry needs to move to cultivar-specific agronomy,” Strydhorst explained.

The research team will continue to test plots in Killam, Bon Accord, Falher, and under dryland and irrigated sites at Lethbridge.

Once completed, the project will have 15 site years of data. However, findings must be consistent to be truly meaningful.

“If we see a yield increase only once out of 15 site years, it’s not going to be important,” Strydhorst said. “But, if we see it 13 out of 15 site years, then that’s the data we need. That will speak really loudly to producers.”

Economics also play a key role once consistent data is available.

“Farmers’ decisions will come down to, ‘Does an X per cent increase in yield have a positive return on investment?’” said Laurel Perrott, a University of Alberta master’s student working on the project.

“It really has to do with input costs, the cost of production per farm, how many bushels those costs translate into, and the market value of the grain.”

The team is working on an economic analysis to answer that question.

As for preliminary surprises, barley’s yield response to plant growth regulators ranged from 1.4 to six per cent, Strydhorst said.

“That was completely unexpected, as it’s something not generally seen with barley. If we see that consistently, it would be fantastic. We also need to determine if that result is specific to a variety.”

On the other hand, Amisk barley’s reaction to fungicides was unpleasantly surprising, she added.

“The fungicides didn’t cause large yield increases in Amisk barley,” Strydhorst explained. “The yield increases are there, but they’re not as substantial as what we had anticipated. That may be a reflection of the diseases we had this growing season or the genetic resistance of the variety. We have leaf samples we’re going to plate out and see which diseases were there. That will give us clues. Again, we will look for consistency.”

These studies provide valuable information for producers and breeders, said Aaron Beattie, barley and oat breeder at the University of Saskatchewan’s Crop Development Centre.

“It allows producers to evaluate the cost-benefit ratio of each input, within the overall set of management practices, and determine if the input will make a difference to their bottom line,” said Beattie.

“Additionally, if breeders understand that a variety responds differently to certain inputs, they can attempt to breed this characteristic into future varieties.”

The field studies will finish in 2016. Recommendations from the 15-year site data will be available to farmers by the summer of 2017.
JUST A YEAR BEFORE THIS PHOTO was taken in 1913 as seeding began at what is now known as the Lethbridge Research Centre, the city of Lethbridge hosted the International Dryland Farming Congress. That event more than 100 years ago drew about 5,000 delegates from 15 countries, including Italy, India, China, Palestine and Persia, who travelled to Lethbridge to look at modern-day farming practices.

The Lethbridge Experimental Farm, as it was known then, was established by the federal government in 1906.

Prior to that, it was a “model farm” created in 1900 by the Canadian North West Irrigation Company. More southern Alberta farmers were beginning to use irrigation and the company felt it needed a research farm to demonstrate farming practices under irrigation.

Land was set aside and, in 1901, the district enticed William Harmon Fairfield, the director of the agricultural experiment station in Laramie, Wyoming, to come to Lethbridge to establish this model farm. News reports from the day said “he was expected to run in ditches, plant trees, fence and break the property, seed it to suitable crops and to demonstrate good irrigated farming practices by helping to solve any problems encountered by settlers.”

Fairfield not only accomplished all that, but is also credited with bringing a few pounds of soil from Wyoming that was naturally inoculated with rhizobial bacteria so southern Alberta farmers could begin growing alfalfa to feed cattle. The soil was scattered on a few acres to start with. Once one field was inoculated, soil from there could be used to inoculate other fields.

In 1905, the irrigation company offered the very successful model farm to the Dominion Department of Agriculture. One year later, the Dominion Experimental Station at Lethbridge was made Canada’s sixth experimental farm.
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