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Practical production tips
for the prairie farmer

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NEW EQUIPMENT

DEERE UPDATES THE S SERIES

New, higher-tech S700 combines debut in Moline for the 2018 model year



PHOTO: JOHN DEERE

By Scott Garvey

Last month John Deere revealed its 2018 product line to farm media at its Moline Harvester Works facility in Illinois. That was an appropriate place to unveil the line, because arguably the most significant new machines to join the green line – at least as far as Prairie farmers will be concerned – were updated versions of the S600 Series combines: the new higher-tech S700s.

"It's a new era of crop harvesting with the new John Deere S700 combine," said Cyndee Smiley Dolan, division marketing manager. "We've evolved from the S600."

The new series includes four models, ranging from the Class 6 S760 to the Class 9 S790. (The brand isn't yet ready to offer a Class 10 combine, according to a product rep.) Most of what separates previous S600s from the new S700s is hidden behind the sheet metal in the four new models. They get an upgrade in "smart" technology and data collection and transfer along with a nod to operator comfort, according to Deere.

"You might wonder what's different," Dolan went on. "It kind of looks

See S SERIES on Page 5 ▶

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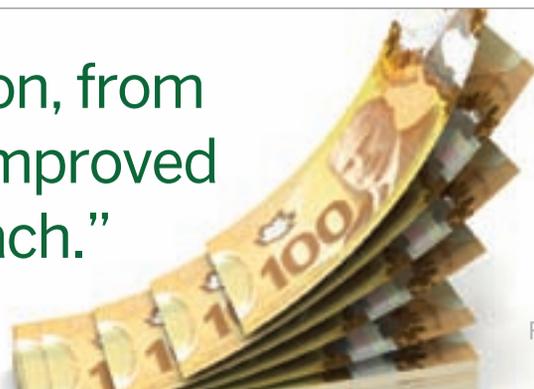
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What's stressing these lentils?

Angie Berner investigates this Crop Advisor Casebook **6**

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It's all coming together



Leeann Minogue

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If you're the chief bookkeeper on your farm, you're probably already celebrating the news about changes to wheat and barley levies. Based on my home-office calculations, you're going to be saving five to seven minutes over the next crop year.

These time savings will come from having just one levy deducted from every sale of wheat and barley after July 31, 2017. You'll be able to enter your grain cheques into your accounting software with one fewer transaction line.

Since July 31, 2012, western Canadian farmers have been paying two separate levies on wheat and barley sales. One of these levies was charged by your provincial wheat, winter wheat, or barley association. The other was the Western Wheat & Barley Check-Off.

The Western Wheat & Barley Check-Off was set up as a transitional levy during the windup of the Canadian Wheat Board (CWB). The money was directed to the Western Grains Research Foundation (WGRF), the Canadian International Grains Institute (Cigi) and the Canadian Malt Barley Technical Centre (CMBTC) – organizations that the CWB used to fund directly. The Western Wheat & Barley Check-Off was set up with a sunset clause, assuming the industry could find a better way to fund these organizations for the long run.

The clock has run down. The Western Wheat & Barley Check-Off ends on July 31, 2017.

For most wheat and barley growers, the only change we'll notice is that we'll see a single, larger, levy deduction rather than two levies on wheat and barley cheques. Levy rates will stay the same in Saskatchewan, Manitoba and the Peace River region.

Finally, a change that results in *less farm paperwork!*

ALBERTA — ON ITS OWN PATH

As well as just moving from two levies to one, Alberta farmers will see a change in the rate of the levies they're paying.

For wheat (including durum and winter wheat), Alberta farmers will pay \$0.09/

tonne less after July 31. The total of the two separate levies was \$1.18/tonne; the new single levy will be \$1.09/tonne.

Barley growers will pay more. The total of the two separate levies had been \$1.04/tonne. After July 31, the new single levy will be \$1.20/tonne – a 15 per cent increase.

Staff at Alberta Barley pointed out that barley growers haven't had a levy increase in more than eight years, and they believe that the new \$1.20/tonne levy will be sustainable for the future.

MEANWHILE IN MANITOBA

Back in early May, many of the levy-collecting commodity groups in Manitoba signed a memorandum of understanding, agreeing that the organizations should work more closely together. They'd been talking about this since 2014, with the idea that working together could lower admin costs, create some research efficiencies and generally deliver more value to farmers.

The groups involved in this are the Manitoba Flax Growers, the Manitoba Corn Growers, the Manitoba Pulse and Soybean Growers, the National Sunflower Association of Canada and the Manitoba Wheat and Barley Association.

In June, these groups hired Synthesis Agri-Food Network, an Ontario advisory firm, to take a professional look at the pros and cons of a potential merger.

Jason Voth, chair of Manitoba Pulse and Soybean Growers and a farmer from Altona, Man., took a couple of minutes away from his sprayer to tell me that he's optimistic that the merger process will be successful. While he's hopeful that things will go well, he does realize that there are many potential snags in a merger process. ("Sometimes you have to take a couple of swings," he said). For now, Voth says, the process of working together to discuss the merger has already brought about increased levels of collaboration among the groups.

Over the summer, Synthesis Agri-Food Network will be meeting with farmers and stakeholders. Voth expects they'll have a report ready to share by the time of the annual CropConnect Conference in early 2018. **GN**

Leeann

PRAIRIE COMMODITY LEVIES ON WHEAT AND BARLEY

In \$/tonne	Before July 31, 2017			After July 31, 2017
	Western wheat & barley	Provincial association	Total check-offs	Single levy
Alberta				
Wheat	\$0.48	\$0.70	\$1.18	\$1.09
Barley	\$0.04	\$1.00	\$1.04	\$1.20
Winter wheat	\$0.48	\$0.70	\$1.18	\$1.09
Saskatchewan				
Wheat	\$0.48	\$0.52	\$1.00	\$1.00
Barley	\$0.56	\$0.50	\$1.06	\$1.06
Winter wheat	\$0.48	\$0.50	\$0.98	\$0.98
Manitoba				
Wheat	\$0.48	\$0.52	\$1.00	\$1.00
Barley	\$0.56	\$0.50	\$1.06	\$1.06
Winter wheat	\$0.48	\$0.50	\$0.98	\$0.98
BC Peace River				
Wheat	\$0.48	1/3 of 1% of gross sales	Variable	No change
Barley	\$0.56			

AG SAFETY

Remove and store duals safely to prevent injuries

Duals are useful to improve traction and reduce soil compaction. However, for some farming activities, they may no longer be necessary. Removing them reduces tire wear and enhances maneuverability. While removing duals doesn't seem dangerous, there are some hazards associated with the task. People have been crushed by falling wheels and experienced strains and sprains. Improperly stored duals are also a hazard. Removing and storing duals can be done safely with the proper precautions. Removing duals is a two-person job. Working with another trained person is not only safer, it's also more efficient.

Before getting started, take the time to review the task. Make sure you have all the personal protective equipment

and tools you need to get started. Nothing is more frustrating than starting a job and finding out that you are missing essential items to finish the task. Ensure that unauthorized persons, children and pets are out of the work area.

Park the tractor in a flat area that is suitable for this type of work, set the parking break and remove the keys from the ignition. Ensure that both front wheels are blocked before starting the work. (You don't need a runaway tractor!)

Hydraulic jacks, wheel blocks, dollies, and impact wrenches are all important tools in removing duals properly. Make sure they are all in good working condition and appropriate for the task.

Make sure to wear the right gear. Work gloves and safety footwear are

mandatory while removing duals. Hearing protection and safety goggles are also mandatory when using an impact wrench.

Some safety tips while performing the job are:

- Use proper lifting and bending techniques to prevent strains when blocking the tractor
- Make sure to properly position and block the dolly to prevent unexpected movement.
- Ensure that the area where you are working remains clear of any tripping hazards.
- Make sure to secure the dual to the dolly using the security chain.

Storing duals properly is just as important as removing them safely. Children and other people have been

inadvertently crushed because of improper storage. Duals should be stored securely, out of the way of regular foot and vehicle traffic. Make sure the duals aren't accessible to children. Tires can be irresistible to children, they look like great fun to climb but can pose falling and crushing hazards.

Following established working procedures when removing and storing duals can make the task easier and safer. Consider hosting a toolbox talk on this task on your farm. Visit agsafetyweek.ca and check out the resources including toolbox talks on topics like removing duals safely, operating portable augers, transporting oversized loads and more. **GN**

Canadian Agricultural Safety Association

Give us your best shot!



Lori McIntosh sent us this photo. She wrote, "My husband and father-in-law, Shane and Don McIntosh, farm together on a century family farm near Stoughton, Sask. Our four-month old, Luke, is a farmer-in-training. He loves being outdoors and, when he's inside, looking out the window on our acreage. This Father's Day, our yellow lab, Jack, decided to join him. This made for a very meaningful picture for us."

Thanks for sharing this picture Lori. We're sending you a cheque for \$25.

Send your best shot by email to leeann@fbcpublishing.com or through Twitter at @GrainMuse. Please send only one or two photos at a time, and also send along some information about where and when you took the photo, or even something about your farm. Photos with larger file sizes look better in the paper.

— Leeann

AGRONOMY TIPS... FROM THE FIELD

HIT THE MARK WITH YOUR PULSE AND CEREAL FUNGICIDES

When getting set to apply a fungicide to pulses and cereals, remember that disease prevention and suppression is your main goal.

Fungicides need to be applied on target in order to be effective, which is why you should keep water volumes and travel speeds top-of-mind.

Use the highest registered water volume while lowering your travel speed so you can be sure to get the most even consistent coverage over the entire crop.

Crop staging is another important consideration. On lentils, for example, you should get into the field before row closure in order to coat the plant stems with your fungicide spray for more complete protection.

By the time of your second fungicide application, that pulse crop will be fully canopied. This is where high water volumes can help distribute fungicide further down to the plant's lower leaves and stems.

On cereals, choose spray equipment according to the crop and fungicide target. For example, twin nozzles that spray forward and backward can help you coat higher, smaller targets — like wheat heads — to increase your level of protection at fusarium head blight timing. **GN**

David Forster, agronomic service representative, Syngenta Canada.



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NEW EQUIPMENT

► S SERIES from Page 1

the same. That's because the new features are built inside the machine. You'll see a new level of machine optimization technology."

The goal of the technology is to make the S Series more efficient machines by offering enhanced and even some automated functions. The 700s accomplish that with the Combine Advisor system, which is a suite of seven different features that help set, optimize and then automate threshing functions to keep the combine working at peak performance throughout the day with little input from the operator.

Combine Advisor includes a new harvest setup application, which is a single screen that the operator uses to set all the initial threshing parameters. "It's a true 'one and done,'" said Dolan. It uses a more intuitive screen layout — something all the combine function pages get.

Harvest Smart, the ground speed control feature that was included on the S600s has evolved to make for smoother on-the-go unloading and re-entry into crop.

A pair of cameras on the clean grain and tailings elevators allows operators to see what's going on inside the machine. They give a real-time look at the quality of grain going into the tank and MOG (material other than grain) will make threshing adjustments easier.

"It's really easy to see those live images," Dolan added. "You push a button and you can see the material going through the machine. And the combine, itself, looks at that visual data and processes it. That's where the new Auto Maintain feature comes in."

Using those images along with data from a series of sensors, the combine's computer can identify opportunities to automatically adjust up to five different settings (cleaning shoe fan speed, rotor speed, concave clearance, chaffer and sieve openings) to improve threshing performance. And it can do that analysis in five different crops, including wheat and canola.



S700s get a new cab with customizable controls and monitor screens.



The 700D rigid draper heads incorporate a new design including improved centre feed drive and an 18-inch top auger.



Images from a pair of cameras on the clean grain and tailings elevators are available to the operator and the onboard computer uses them to evaluate thresher settings.



Cyndee Smiley Dolan, John Deere's division marketing manager, provided details on the new combine features.

That would be a particularly useful feature as conditions change throughout the day. It also allows less-experienced operators to do a better threshing job.

The Active Yield feature uses load cells in the grain tank to automatically calibrate the mass flow sensor, which should improve the accuracy of crop data collected by the on-board computer.

When it comes to operator comfort, the S700s get an updated cab. Inside, the new 4600 Command Center display is the main operator interface with the machine. This interface is common to Deere tractor and sprayers as well, so operators in an all-green fleet don't need to learn an entirely new system. It uses customizable run screens and an optional second monitor is available. Customizable buttons on the control panel allow each operator to set their own preferences.

New features are built inside the machine

"The S Series has been in the market since 2012, but we've continued to evolve it," said Dolan. "Touching most major areas of the combine. That's resulted in a 15 per cent increase in performance since it was launched."

That performance increase comes in part from three recent improvements to the S Series, according to Dolan: the Dyna Flow Plus cleaning shoe that reduces tailings, Active Concave Isolation, which is a hydraulic system that holds the concaves steady, and platform tilt that allows the header to be tilted up to 17 degrees from the cab.

Up front, new 700D rigid Draper headers incorporate a series of design improvements,

including a new centre feed-section drive system. A top crop auger with an 18-inch diameter helps improve material flow and reduce slugs in wet conditions. The header also gets a centre section seal kit to cut losses in that part of the header by up to 45 per cent when harvesting canola. **GN**

Scott Garvey is machinery editor for Grainews. Contact him at Scott.Garvey@fbcpublishing.com.



For a video look at a new S700 combine go online to Grainews.ca and check out the eQuipTV episode under the "videos" link.

TIP OF THE ISSUE

New year, new disease challenges

Growers know which diseases exist in their fields and how to manage them, especially widespread diseases like sclerotinia, blackleg and clubroot in canola.

However, changing management practices have altered the prevalence of many diseases, leading to an increase in frequency and affected areas due to over-reliance on genetics rather than good management practices.

Growers should be on the lookout for both new and reoccurring diseases for all crops. These include:

- Sclerotinia in all broadleaf crops due to high levels of sclerotia (the resting bodies for the disease) produced over the past several years, as well as

projected high acres of susceptible crops.

- Fusarium in cereals, especially durum (highly dependent upon humidity and temperatures during flowering).
- Stripe rust in wheat, especially southern Alberta and southern Saskatchewan.
- Root rots in pulses where soil moisture levels that are currently high, remain high into June.
- Clubroot and blackleg in areas where the pathogen has been observed and/or good genetics are not utilized or are over-utilized.
- Goss's Wilt in corn in selected areas of Western Canada, or with favourable weather conditions.

- Seedling diseases, as well as late-season phytophthora root rot in soybeans, caused by wet fall and spring conditions.

To avoid increasing fungicide costs, decreased yield and disease spread, take steps to minimize the damage these diseases can cause in the current growing season and future seasons:

1. Employ good crop genetics where available; set realistic target populations on the upper end; practice good rotation and tillage and plant into the best seedbed possible.
2. In terms of disease, understand the disease life cycle (specific to disease of concern) and disease triangle to help identify the "weak spots" in the pathogen.

3. Scout for disease thoroughly and use the appropriate fungicide at the right time, with the correct water volume, application rate and at the correct crop stage to optimize disease control.

4. Understand specific fungicide product advantages and limitations and rotate fungicide products where appropriate to avoid the development of fungicide resistance.

For more information regarding diseases that could be a concern in your area, speak to your local crop protection sales representatives and crop advisors. **GN**

Ellis Clayton, DuPont Pioneer; Doug Fehr, DuPont Crop Protection; Doug Moisey, DuPont Pioneer; and Michael Weir, DuPont Pioneer.

CROP ADVISOR'S CASEBOOK

What's stressing these lentils?



Angie Berner, PAg

By Angie Berner

"I have never seen anything like it in 15 years of growing lentils," Vaughn, a southern Saskatchewan producer, told me after he discovered yellowing, unhealthy-looking lentil plants in his field the week of June 23, 2016.

Our office had already received several calls from Assiniboia-area growers with similar concerns. Producers had also dropped off samples of affected plants, which included both red and green lentils.

"I sure hope it isn't a new disease, or something that was hung up in my sprayer tank," said Vaughn.

I headed out to Vaughn's 3,200-acre grain farm that afternoon, where he grows durum, lentil, canola, chickpea and soybean, to determine what was causing the plant injury. While in the field staging the crop for fungicide application timing as well as checking the efficacy of a graminicide application made two weeks earlier, Vaughn had noticed the affected plants.

In addition to leaf tip yellowing/whitening, other symptoms included wilting and rolling of the leaves, although all other plant parts appeared to be healthy. Some plants had more affected leaves than others, however, there was no pattern to the affected plants or the location of the injured leaves on those plants. For example, the top leaves were affected on some plants, while the middle leaves of others were exhibiting symptoms.

Upon inspection, plant roots looked healthy and nodulation

was good, indicating normal nitrogen fixation.

The random distribution of affected plants occurred throughout the entire field. Also, more than one of Vaughn's lentil fields, and several neighbouring fields, were presenting symptoms.

In addition to the graminicide application two weeks earlier, another important factor to consider was several severe rain storms had passed through the area 10 days prior to my visit, bringing high amounts of moisture.

Vaughn thought disease was a good bet as the cause of the yellowing, wilting leaves, given the recent high precipitation levels. He also considered residue contamination in the sprayer tank due to improper tank clean out as the problem, when he switched from spraying canola to lentil fields.

However, the damage was not consistent with chemical injury from residue left in the sprayer tank. There was no distinct pattern to the affected plants, particularly straight lines separating healthy and unhealthy plants. In fact, there was no noticeable area where the plant damage differed in severity.

We scouted several areas of the field and all showed the same random distribution of symptoms. Also, Vaughn's spray tank clean-out procedure was adequate. Furthermore, after reviewing the history of all chemicals applied to these fields for the past four years, it was unlikely we were dealing with soil residual herbicide carryover issues.

While scouting, we also established efficacy and crop tolerance

of the graminicide application were good. Additionally, pest pressure was not high, and, in particular, aphid populations were below the threshold level.

Another aspect to explore was soil nutrients – could Vaughn's crop be suffering from a nutrient imbalance or deficiency? After looking at his records, I thought Vaughn had a good fertility plan, as he'd applied 60 pounds of MicroEssentials SZ (12-40-0-10S-1Zn) at seeding. Not to mention the symptoms were present in the majority of Vaughn's lentil fields as well as most of the neighbouring lentil fields in the surrounding Assiniboia area. The problem was too widespread to be a nutrient or micronutrient issue.

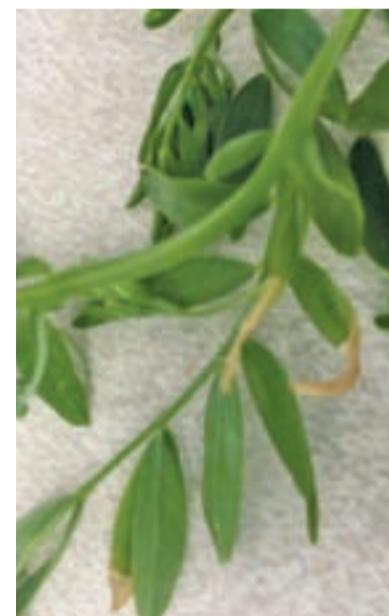
Our investigation was narrowing. We'd eliminated several theories, leaving us to consider disease pressure and environmental stress. But which factor had caused the plant injury, and how would that be determined?

Disease pressure or environmental stress? If you think you know what's affecting Vaughn's lentil crop, send your diagnosis to *Grainews*, Box 9800, Winnipeg, Man., R3C 3K7; email leann@fbcpublishing.com or fax 204-944-95416 c/o Crop Advisor's Casebook. The best suggestions will be pooled and one winner will be drawn for a chance to win a *Grainews* cap and a one-year subscription to the magazine. The answer, along with reasoning that solved the mystery, will appear in the next Crop Advisor's Solution File. **GN**

Angie Berner, PAg, works for Richardson Pioneer Ltd. in Assiniboia, Sask.



Some plants had more affected leaves than others, however, there was no pattern to the affected plants or the location of the injured leaves on those plants. For example, the top leaves were affected on some plants, while the middle leaves of others were exhibiting symptoms.



Upon inspection, plant roots looked healthy and nodulation was good, indicating normal nitrogen fixation.

Casebook winner

The winner for this issue is Ken Giebehouse, from Vegreville, Alberta. Ken sent us a very well-considered answer! Thanks for entering Ken. We're sending you a *Grainews* hat and renewing your subscription for one year.

You could be a winner too. If you know the answer to this issue of Casebook, email me at Leeann@fbcpublishing.com.

Leeann Minogue

CROP ADVISOR'S SOLUTION

Avoid Group 4 injuries with tank cleanout

By Jody Christopher

Early last June, Mike, a producer from southwestern Saskatchewan, asked me to look at the yellowing, stunted plants in his pea crop. Mike farms 3,000 acres near Morse, Sask., where he grows green lentils, yellow peas, mustard and durum.

The affected plants had twisted and bent stems, in addition to chlorosis at the growing point and stunted development. Also, there was a distinct line between the headlands and the rest of the field, separating affected and unaffected plants, respectively.

Two days before Mike noticed the damage, the pea field had been sprayed by a custom applicator with a tank mix of Group 2 (imidazolinone) and Group 1 (cyclohexanedione) her-

bicides. Mike thought the cool temperatures of the evening application may have caused the symptoms.

Although application of a Group 2 imidazolinone herbicide can cause yellow flash under certain conditions (i.e., cool temperatures, plants already under stress, or a crop past optimum staging), the stunted growth and twisted stems of the damaged plants led me to believe the injury was caused by another chemistry. Also, comparison of the weeds in both affected and unaffected areas was telling.

Furthermore, the straight lines separating healthy and unhealthy plants also supported the herbicide injury theory. Symmetrical areas or straight lines don't normally occur in nature. The damage pattern in this field matched the length of the sprayer boom, and its path, exactly

— confirming a sprayer error had caused the injury.

One phone call to the custom applicator settled the matter. The operator had sprayed a tank mix that included a Group 4 herbicide on a cereal crop before applying the in-crop herbicide on the pea field. The symptoms were caused by Group 4 residue in the sprayer tank.

In fact, we could see exactly where the first tank was sprayed, and where the booms were shut off. The first sprayer tank pass left twisted and stunted pea plants in its wake, whereas the second and remaining sprayer tank passes did not injure the plants.

Pea plants and weeds exposed to Group 4 herbicides will have twisted and bent stems, chlorosis of the growing points, stunted development, and wilting, as observed in this

field. I notified the custom applicator about the damage to the pea field due to improper tank cleanout procedures.

Performing tank cleanout correctly will prevent the unnecessary headaches and yield and financial losses caused by herbicide residue left in sprayer tanks, booms and filters. For example, spray out any solution remaining in the tank before switching to a different chemistry. Thoroughly rinse the tank, booms and filters several times with a strong detergent and adequate amounts of ammonia.

Furthermore, although it was not responsible for the damage in this field, when it comes to Group 2 (imidazolinone) herbicide application, avoid spraying in cool temperatures, if the plants are under stress, or if the crop is past staging, to reduce yellow flash.

Those peas that did survive the Group 4 herbicide injury were severely stunted, and maturity was delayed, resulting in significant yield loss when compared with the rest of the field. In addition, with less crop competition, a second flush of weeds created further headache for Mike at harvest, and a larger weed seedbank for the following season.

Fortunately, though, only the first tank of herbicide was harmful to the crop — the rest of the field performed well. However, Mike continued to monitor the field, and the damaged sprayer pass remained conspicuous for the duration of the season.

Jody Christopher, AAg, works for Richardson Pioneer Ltd. at Reed Lake (Herbert), Sask.

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GRAIN STORAGE

Adding heat to dry out grain in the bin

This PAMI researcher thinks farmers could use supplemental heat more often

By Lisa Guenther

Supplemental heat can turn a poor drying day in November into a beautiful drying day, says Joy Agnew, who manages ag research services at Prairie Agricultural Machinery Institute (PAMI). “Even if it’s 100 per cent humidity outside and it’s cold, if you warm the air by 10 degrees, you cut the humidity by half. Now it’s 50 per cent humidity and warm air, so it’s perfect drying conditions.”

Agnew thinks supplemental heat has been under-used, although last year’s fall gave it a boost. “But I think it can be utilized almost yearly. And that’s going to widen the harvest window.”

PAMI plans to analyze whether higher grades will make the investment in a supplemental heating system worthwhile. At interview time PAMI was lining up the last bit of funding. Agnew says they hope to have the economic analysis done within a year.

THE SCIENCE OF SUPPLEMENTAL HEAT

The first thing to know about supplemental heat is that the warmer the air, the more water it can hold, says Agnew. The more water the air can hold, the greater the drying capacity.

Farmers should set a target of 15 C to 25 C for air going into the grain. Anything lower than 15 C won’t have much drying potential, Agnew says. Air hotter than 25 C turns the bin into a heated air dryer, and the bin’s air flow rate can’t handle those high temps, she says.

Whether or not a farmer can dry grain when it’s -10 C outside depends on the system’s heating capacity. If it can only handle a 10 C increase, it’s unlikely to be useful when the outside air temperature is below 5 C.

Agnew also warns that if farmers are adding heat when it’s really cold out, they should keep the air temperature below 25 C as it enters the bin. With hot air inside the bin and cold air outside against the bin’s steel surface, “you’re guaranteed to have condensation and freezing in those situations. So when it’s freezing cold outside, kind of dial back the target temperature going in.”

EQUIPMENT OPTIONS

Equipment options are, Agnew says, “becoming really interesting because there are so many new players in the equipment option game. For example, the oil and gas industry is realizing the potential of grain drying as another opportunity for their equipment.”

The oil and gas industry’s high-capacity fans and heaters are perfectly suited for grain drying, Agnew

says. Most bin fan manufacturers have heater options as well, she adds.

Natural gas is by far the most cost-effective way to fuel supplemental heat. Propane, electric, and diesel are also options.

Hydronic systems, which use things such as flax straw as fuel, can also work and can be a low-cost option to produce heat. “The biggest drawback of supplemental heat is the cost to fuel it, basically.”

Heaters can be upstream or downstream of the fan, depending on what works for that situation, Agnew says. Portable heaters are also an option.

Farmers can also put together their own systems. “I’ve heard of all kinds of farmer-rigged systems that work great. But not many of them are commercially available.”

For example, Agnew says a group of Humboldt-area farmers have retrofitted a swimming pool heater system into a hydronic system. Agnew says it’s “extremely robust” and easy to maintain.

The drawback to most heating systems is that they’re either on or off. “You can’t dial it in to have a specific temperature going in to the grain.”

The swimming pool system comes with controls that create a consistent air temperature going into the grain, which is an advantage.

FAN AND BTU CONSIDERATIONS

“The energy to pull moisture out of the grain comes from both the air-flow rate and the temperature difference between the air and the grain,” says Agnew.

Farmers adding heat to the air will need at least one CFM per bushel. Anything lower than that risks heating the grain without removing moisture, Agnew says.

Agnew says there’s also a rule of thumb to figure out how much BTU one needs: airflow rate in CFM/bu. x target temperature increase (in Fahrenheit) x 0.8. Agnew says the target temperature increase is usually around 18 F.

For example, a farmer wanting to add heat to a 5,000 bushel bin would use the formula as follows: 5,000 CFM x 18 F x 0.8 = 72,000 BTU per hour.

Agnew notes that this formula assumes ideal heat transfer. If the system is losing heat in the transfer, the farmer might have to increase the BTU to offset the loss.

Fan capacity and other available equipment will determine whether a farmer has to fill the bin part way and dry grain in batches. The CFM per bushel might dictate that the bin only be filled halfway, for example.

“The issue with that is now you have a huge headspace in the bin. And that’s where moist air is going to be collecting and accumulating.”

Agnew says in those cases, more ventilation is needed to move out the moist air.

“It’s probably better just to size a fan properly for the size of bin you have so that you don’t have to have a ton of head space in there. But with these big bins, it’s becoming more and more difficult to get a fan big enough to get one CFM per bushel.”

“The big hundred horsepower fans coming out of the oil and gas industry might change that,” she adds.

It’s hard to estimate how much moisture one can pull from the grain with supplemental heat. It depends on grain type, air flow rate, and other factors.

“But basically it’s what you can expect from a good drying day,” says Agnew. A half a per cent or a per cent a day is a reasonable expectation. Farmers will need to turn the grain to get a uniform moisture and temperature profile, she adds.

Farmers should also keep a close eye on the grain so it doesn’t over-dry. Agnew has talked to farmers who saw two to three per cent moisture drops a day.

“It goes extremely fast if you have the right airflow and temperature combination.” **GN**

Lisa Guenther is field editor for Grainews based at Livelong, Sask. Follow her on Twitter @LtoG.

GRAIN STORAGE

Getting through the mud to stored grain

Wet weather can ruin grain-hauling plans. See Matt Undlin’s surefire solution

By Megz Reynolds

As farmers we are always at the mercy of Mother Nature and lately it seems that weather patterns are getting even more intense.

Outside Kyle, Saskatchewan, we had over 33 inches of rainfall last growing season but a fairly average snowfall. For Matt Undlin, a farmer in Lansford, North Dakota, the exact opposite was true. “Rainfall was average and the snowfall was incredible. We had six feet on the level and 20 feet in the trees and yard,” Undlin told me in response to the amazing photo he shared on Twitter in the spring.

With spring arriving, temperatures warming and snow melting Matt was faced with a problem more than a few farmers will understand all too well. He needed to get into his bin yard to haul, but it was too wet and swampy to get trucks in and loaded without also getting them stuck. “Hauling grain has reached a new level. The cost of storing grain

isn’t cheap,” wrote Undlin as he posted his solution to Twitter: a wooden walkway to the bins.

RIG MATTING

Captive Oilfield Rentals out of Estevan, Sask., said they have never installed a rig mat road for a farmer but would be happy to if asked. Their turn around time from when contacted to when trucks are being loaded with prebuilt 8’x14’ rig mats is two hours and that they distribute and set up across Western Canada.

If you’re dealing with this problem and are considering calling Captive Oilfield Services for a quote you should have a couple things worked out first. They’ll need to know the square footage required as well as the width of road you are looking for. Their rental contracts can be made up for days, weeks or months. Of course if you are feeling inspired and have some spare time on your hands you could always go a head and build your own.

Laramie Eyben farms in Vermilion, Alta., and struggled with excess water and mud in his bin yard this spring as well. He said the winter

snowfall was average but this spring has been wetter than normal. I asked Eyben if he had considered using rig mats to create a road. He said, “I used to truck in the oil field so I have used them in the bush before and have talked about using them many times.”

BUYING RIG MATS

For those who would be more interested in buying used rig mats instead of renting, Laramie said that they usually pop up on the Edmonton Kijiji website, and are sometimes sold at Ritchie Brothers Auctions.

If you do buy used rig mats to put your own access road in and are looking for another use for them when things dry up, there have been farmers using them as bin pads for hopper bottom bins. Or just save them. The way things are going with the weather, I’m sure they will come in handy sooner than later. **GN**

Megz Reynolds is a farmer and mother on a farm near Kyle, Saskatchewan. Follow her blog at www.bloodsweatntears.com.



This wooden rig mat road was built by Matt Undlin.



Laramie Eyben shared this photo of his snowy, muddy yard this spring.

PHOTO: MATT UNDLIN

PHOTO: LARAMIE EYBEN

GRAIN STORAGE

Maintaining canola quality in grain bags

Canola acreage is up. Will you need to store some of your harvest in grain bags? Keep the quality high

By Dilia Narduzzi

Researchers from the University of Manitoba have recently published two studies on how canola fares when stored in grain bags for different periods of time. The research was done under Prairie weather conditions, funded by the Canola Council of Canada.

Grain bags, sometimes called silo bags, are marketed as temporary storage solutions for farmers who need extra storage space. Some may not have enough room for a bumper crop in their permanent bins. Others need extra storage to separate one crop from another. A silo bag can do those things, says Dr. Chella Vellaichamy, one of the University of Manitoba researchers that conducted the studies. Another reason farmers use grain bags is for in-field storage, says Vellaichamy, to make fieldwork more efficient.

Vellaichamy says that although the general belief is that grain bags are cheaper than more traditional grain storage, that's not actually the case. When "you go through the cost-benefit analysis, it's actually pretty similar in cost, there's not much savings because these bags are one-use only. Next year you'll have to buy new bags." And, as you probably know, it's not just the bags that you need to buy, it's also the grain bag loader/unloader.

RESEARCH RESULTS

So what did Vellaichamy and his colleagues find about how well canola keeps in the silo bags? A lot of depends on the grain you're putting into the bags. Dry canola can be stored for up to 10 months without any quality deterioration, says Vellaichamy. "That's the maximum storage time for canola on a Canadian Prairie farm in a silo bag." For canola stored at more than 10 per cent moisture, says Vellaichamy, caking due to moisture condensation can more easily damage grain; that damage can happen more quickly if the moisture content is higher than 12 per cent.

If it's been a hot and dry summer, and you're harvesting at the end of the season, the grain might be okay to go into the bag as is; if it's been a wet season, you may have run your canola through the dryer before putting it in the bag to maintain high quality canola if you're keep it there for a while.

If you plan to keep the grain in the silo bag for a very short term, three to four weeks maximum before you put it into a more permanent storage, then it's OK to put it in the silo bag wet.

Generally, if you're storing dry canola from October through April, it should maintain its quality. But when spring and summer come around and the temperature goes up, a quality issue could arise. Ambient temperature conditions impact grain stored in bags; the

warmer it gets, the more deterioration can happen due to moisture migration and condensation.

If your canola is nine per cent moisture or less, you can store it for 10 months (until August). If you're hovering at around 10 per cent moisture, you can store it for about seven months without deterioration (until April). Wet canola, 12 per cent moisture, should be taken out of the bag before the temperature starts to rise, that is,

before winter ends (preferably the end of February).

With very wet canola, 14 per cent moisture, you'll need to dry it within a month's time. You'll probably want to avoid summer storage altogether if the moisture content is high side and you want to maintain a Grade 1 or Grade 2 designation, says Vellaichamy.

Another thing Vellaichamy and his colleagues found over the two years is that the quality of the grain

stored depends on the weather during the seasons during the year. "If it's been a mild winter, not that cold, then you have to unload before the snow starts melting. If it's been a really cold winter, you can probably unload up to three or four weeks later," says Vellaichamy.

Continuous monitoring of the bags for damages due to birds, deer, and rodents is another important factor for success of this silo bag storage system.

Silo bag storage is always undergoing review for improvement. Vellaichamy says manufacturers have been testing the bags under different conditions and with different crops. They are also developing new, more airtight techniques to seal the bags, rather than using wooden 2x4's to close the ends of the bags. **GN**

Dilia Narduzzi is a freelance writer in Dundas, Ont.

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REPORTER'S NOTEBOOK

Getting the call: summoned for jury duty

Some people will do anything to get out of the office. Lisa Guenther chose a chance to learn about the courts



Lisa Guenther

This spring, I picked up some mail that had been sent to my old address. To my surprise and disdain, I'd received a juror summons from Sask Justice.

HOW IT WORKS

In many ways, jury selection in rural Saskatchewan is quite different from what we see in the movies or in American news stories.

However, because the trials are held at the Court of Queen's Bench (which only handles indictable, or more serious charges), there were a few nice touches. For example, the judges, lawyers and court staff wore black robes. The courthouse in Battleford is old, and grand, with plenty of dark oak. The Meadow Lake courthouse is much newer, but also beautiful, with plenty of natural light.

If you're called for jury selection in rural Saskatchewan, I think you can expect to attend a couple of jury selections. They tend to hold a jury panel for 10 weeks or so, and the jury panel will attend all the jury selections scheduled for that time. But you might not end up attending any.

An acquaintance was called for jury service, but the trial was cancelled before the jury selection began.

When you first walk into the courthouse, you'll sign some papers and the court staff will hand you a card that has your number.

Inside the courtroom, a court clerk draws 20 numbers. Those jurors line up (and they're very particular about everyone lining up in the order their numbers were called). Both the defence and the Crown can strike a certain number of potential jurors without giving a reason. The judge might also excuse jurors for various reasons.

The court clerk will keep drawing numbers until they've selected 12 jurors, plus two alternates. Once the jury is picked, the trial begins. The alternate jurors will likely be allowed to go home that first day, unless another juror is excused.

In Battleford, it took a good hour to go through all the people who wanted to be excused from jury service. Individual jurors aren't questioned about their abilities or beliefs. Instead, the judge asked anyone with hearing issues to step forward before they started drawing numbers.

Those people would line up to talk to the judge. The judge asked each of those people about how serious the

hearing impairments were. He went through the same process for people with other health issues, for people who knew anyone involved in the trial, for people who wanted to be excused for any other reason, etc...

The judge in Meadow Lake had a more efficient process. He only started asking people if they wanted to be excused once their numbers were drawn. That meant sorting through way fewer people who wanted to be excused.

I heard all kinds of creative suggestions from friends and families on things to tell the judge. However, many of them were not the kinds of things I'd want to declare in front of 100 or so people. The judges often asked questions about people's reasons for wanting to be excused, so personally I wouldn't try lying, either.

THE JURY'S ROLE

The jury has a very clear role in criminal trials. Jury members must decide what the facts are in the case, and whether the Crown has proven its case beyond a reasonable doubt for each charge. That means each juror must be certain that the accused is guilty. Or the jury must agree that it's not sure, and decide not guilty. The jury can agree that the accused is guilty of some charges, and not of

others (unless some of the charges are closely connected), or guilty of everything, or not guilty of anything. The jury needs to reach consensus to render a verdict.

There are also things the jury shouldn't consider, such as possible sentencing (that's up to the judge), prior charges or convictions, and anything they might have heard in the media or elsewhere outside the courtroom.

The jury isn't necessarily sequestered for the duration of the trial. But we were told not to use the front entrance of the courthouse (I assume they didn't want us bumping into witnesses, the accused, or anyone else with a dog in the fight). We had our own conference room where we could discuss the evidence and deliberate.

Once the Crown and the defence had finished presenting evidence, we were sequestered as we made our deliberations. In practical terms, that means jurors can't just wander off on their own for a smoke break or a walk. If deliberations go on long enough, it also means staying overnight in a hotel, rather than going home.

As a juror, you must remember that what happens in the jury room stays in the jury room. What I mean is that Canadian jurors are never allowed to talk about deliberations

with other people, even once the trial is finished.

I have no idea how long deliberations usually take. The jury might have questions about the evidence or need to hear transcripts of witness testimony read back to them. That means going back into the courtroom, so the judge, lawyers, and accused can hear the question as well.

Eventually, the jury reaches a consensus on the charges and writes down the verdict. Everyone goes back into the court. The judge reads the verdict, and then asks the jury foreperson to tell the court the verdict on each charge. Once the jury has delivered its verdict, everyone on the jury is free to go.

At some point during the first jury selection, it occurred to me that it would be way better to be on the jury than to be a victim or the accused. Those were the people who deserved a fair, impartial jury, I told myself. So I stopped whinging so much.

In the end, I did find jury service interesting. It was good to learn a bit more about how our legal system works, especially in northern, rural Saskatchewan. **GN**

Lisa Guenther is field editor for Grainews based at Livelong, Sask. Follow her on Twitter @LtoG.

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NEWS BITS

You could be called for jury duty



PHOTO: THINKSTOCK

Anyone could receive a summons for a chance to serve.

Here are some tips, in case you receive a juror summons:

1. If you need to sit down, arrive early. Latecomers might be stuck standing.
2. Turn your cell phone off in the courtroom and don't wear a hat when addressing the judge.
3. People on the jury panel were reimbursed for mileage, so make sure the court has your current address. (If you're picked for the jury, you'll also get a per diem, and \$80 a day if your employer doesn't cover your wages. They might also cover hotel costs if you're traveling from afar or if you're sequestered).
4. If you're planning to ask to be excused, be prepared for follow-up questions from the judge.
5. If you're on the jury, and it looks like you'll be sequestered, bring an overnight bag into the jury room. Once the jury is sequestered, court staff might not allow you to go to your car to grab your overnight bag (they'll probably warn you about this first thing in the morning).
6. If you're picked for the jury, the trial will start right away. It's impossible to know exactly how long the trial will last, and they probably won't give you an estimate before jury selection. But plan on being gone at least a day, and maybe all week.

Lisa Guenther

UNDERSTANDING MARKET BULLS AND BEARS

A look back at pricing your wheat

Marketing grain is always a risky business. Here's what could have happened



Brian Wittal

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Spring seeding and combining went better than expected for the most part across the Prairies and the crops are off to a decent start. Excess rains in some regions and dryness in others has caused some concerns but overall the crop is in and growing and looking good.

Weather forecasters are watching the current La Nada weather pattern in the Pacific waters and trying to determine if it will persist. La Nada would mean a hotter and dryer summer for a good portion of the U.S. grain-growing region and the Canadian Prairies. If the La Nada transitions into an El Niño pattern, we will see more temperate conditions through the summer, with moisture and moderate temperatures.

So far La Nada is holding on, causing weather issues across parts of the U.S. growing regions, in particular severe extended dryness in the spring wheat-growing areas of Montana and the Dakotas, which sparked a spring-time wheat rally. Recent rains across these areas will help temporarily relieve drought concerns, but there are many growing days left before harvest, and uncertainty has provided the perfect setup for a spring/summer weather rally for U.S. wheat futures which could potentially linger right through to harvest.

MARKETING SPRING WHEAT

If you have already pre priced some wheat earlier in the \$7 per bushel range for new crop delivery you are probably kicking yourself now, but remember that when you took those contracts conditions were different. Expectations were for another large world wheat crop, which wasn't going to help reduce already burdensome stocks. At the time \$7/bu. was a profitable price so you made a sound decision based on the facts at hand at the time.

The neighbor who procrastinated and hasn't yet pre-priced any wheat is looking pretty smart, but more often than not, those who procrastinated in the past will continue to do so. They will likely watch prices hit a high and fall back down, then price at a level likely below the \$7/bu. you locked in earlier. It's the nature of the beast!

Looking back, what could you have done to get a better result based on how markets have played out so far?

Back in January to March when there were offers of \$7/bu. for new crop wheat, once you signed the delivery contract you could have then bought a call option contract. This would have kept you in the market in the event that futures prices rallied — which they did. The cost to buy a call option would have likely been in the 35¢/bu. range (\$12.85/tonne). It wouldn't have

been a cheap way to go. At that time, based on world stocks and other variables it seemed like a long shot that futures would rally, so why spend 35¢/bu. to protect yourself on a longshot?

Looking back, it's easy to see what you should have done, but the world of farming and futures markets doesn't allow you that luxury. All you can do is review your decisions for future reference, to help you make that next decision.

MARKETING ACTIONS NOW

This is a good time to reassess your yield potentials and re-examine your cost of production.

If current market prices are high enough to give you a profitable return, decide if you should pre-price more of your crop. If you do, should you buy a call option contract so if futures climb higher you will gain that value back? In a volatile market, target price contracts are a good way to pick off high prices.

Another strategy is to use a put option to set a floor price for your grain. If the futures continue to go higher, you can lock in your actual delivery contract at the elevator at the higher price at a later date. If futures prices fall, the put option has you protected, and you can wait until you know your grade before actually pricing any of your crop, reducing grading risk and potential contract buyback costs.

Marketing is not easy, and there

is never a 100 per cent right answer as to if or when you should sell. Once you come to grips with that, you will start making better decisions based on the information you have at hand. **GN**

Brian Wittal has 30 years of grain industry experience, and currently offers market planning and marketing advice to farmers through his company Pro Com Marketing Ltd. (www.procommarketingltd.com).

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AG IN MOTION

Ball cap is icing on the Ag In Motion cake

The Ag In Motion farm show is a chance to see crops growing, machinery moving, and Lee Hart in person



Lee Hart

If you are anything like me, who can sleep these days it being so close to the start of the 2017 Ag In Motion farm show near Saskatoon? You'll probably just be getting this *Grainews* issue as the show is about to start on July 18, but if you see this and make it to show look me up.

I will be in an information booth on the afternoon of July 18, around the *Grainews* booth on July 19 and back in an information booth on the morning of July 20. They have me at information booths because I am so very well informed. You'll know where I am — there is usually a line up of people asking me for directions around the show.

I am bringing 18 *Grainews* ball caps to give away. So if you make it to the show site near Langham, Sask. (about 20 minutes northwest of Saskatoon) the first 18 people to correctly identify me as the best writer on the *Grainews* staff gets a ball cap — it is well worth the trip, they are black caps that go with any outfit. (Never mind saying I'm the best writer, even if you just mention I am the oldest writer, that is close enough.)

I really don't need *Grainews* readers to tell me I am the best writer — that was confirmed to me years ago. And I was reminded of that after recently and unfortunately reading the obituary for long time Alberta farmer and politician LeRoy Fjordbotten.

His is probably not a household name to most, but I first met Mr. Fjordbotten almost 40 years ago. I was a much younger reporter at the *Lethbridge Herald* newspaper and he was an energetic young Conservative candidate looking for a seat in the Peter Lougheed government around 1980. He was about to give a talk at a rally at the old Empress Theatre in Fort Macleod. I introduced myself and said I would be covering his speech. He thought that was great and just happened to mention "Lee you are the best writer at the *Lethbridge Herald*." That confirmed to me that he was a very smart man and would make a great member of the provincial legislature. I covered his talk, he later went on to win the election in the Macleod riding.

A few years later, I left the *Lethbridge Herald* for a writing position with Alberta Agriculture in Edmonton and I worked for LeRoy Fjordbotten for about half a day. He served as Minister of Agriculture during part of his political career, and he was just transitioning out of that portfolio when I started. I carried on telling the world about great Alberta Agriculture achievements under the leadership of the new ag minister Peter Elzinga.

Anyway, I always remembered how astute Mr. Fjordbotten was to acknowledge my talent. After he left politics he became a consultant, continued farming at Granum northwest of Lethbridge until a couple years ago. He was 78 at the time of his passing.

Aside from that walk down memory lane, you'll enjoy Ag In



These are just a few of the people I helped navigate the Ag In Motion show site in 2016. (Some may still be lost).

Motion. I've been to lots of farm shows over the years. It doesn't happen often, but it's always better when you see equipment working in a field. It's not just a quarter million dollars worth of paint sitting there, this thing actually does move.

Ag In Motion has equipment and field demos in spades and there are plenty of crop plots as well. Last year ATP Nutrition guys produced a 94-bushel/acre pea crop plot. Let's see if they can beat that.

Bring good walking shoes, there is a lot of territory to cover. Last year I was driving a shuttle from the parking lot to the main entrance gate and a few people mentioned the show should offer golf carts for rent. It was the really old people over 50 doing most of the complaining. Harvey Dann of West St. Paul, Manitoba — a very agile 73 — was one I talked to who thought golf cart rentals would be a welcome feature. I did put that idea in the suggestion box.

And if they don't have golf carts, my second suggestion was picnic tables with umbrellas every 30 feet with free ice cream. We'll see if that good idea flies.

Speaking of food — the show does have a cluster of about 20 concession wagons right in the centre of the grounds — all light, healthy, low-cal fare, that will supply the nutrition you need for the day. But also check the outside perimeter of the show area. Last year I found the Fast family concession stand just on the outskirts of the high traffic area.

A farm family from the Rosthern, Sask., area, Pam Fast assisted by husband Ernest and her mom Marlene Martens served up some great food at their trailer/kitchen.

You can't go wrong with \$5 for coffee and a giant cinnamon bun for breakfast, which is almost too much for one person, but I was a



I'm hoping the Fast family of Rosthern, Sask. will be back in the concession area.

trooper. And the upcoming lunch featured pulled pork sandwiches. I hope they have returned to the 2017 show joining the other food service vendors.

Livestock and livestock equipment hasn't been a big part of Ag In Motion, but they've been ramping it up over the past couple years. So I am expecting more at this year's show.

One not-necessarily-new, but nifty device you will see at Ag In Motion this year is the Frostfree Nose Pump developed by the Anderson family of Rimbey, Alta. Jim and wife Jackie developed and began marketing this cow-powered pump about 15 years ago. Their son Jeff has now taken over marketing.

It is a relatively simple device, housed in a bright blue box that is mounted over a well. There is a piston that goes down the well pipe. The animal (beef or dairy animal) learns to use its muzzle (nose) to push on a paddle. Each time it pushes the piston draws water from the well and into a drinking bowl just below the paddle. It's a slick year-round (frost free) watering system.

Where were the Anderson's when I was a kid? The furthest pastures on our dairy farm had hand-dug wells, but no electricity. So my Dad always figured it was a good summer project for Lee to operate the hand pump to fill a trough for about 30 dairy cows. Would it have killed him in the 1960s to spend a couple thousand dollars to run a power pole to this well site? Apparently so. Somehow children were free labour. Do you know how much water 30 dairy cows drink each day? According to my calculation about 100,000 gallons. It was a lot. Pumping water for those cows was not the "how-I-spent-my-summer-vacation" report I wanted to write when school resumed.

The Anderson invention came too late to help me. But it can bring water to any pasture at any time of the year — worth checking out.

I'll have my limited supply of designer *Grainews* caps in hand. Hope to see you at Ag In Motion. **GN**

Lee Hart is a field editor with *Grainews* based in Calgary. Contact him at 403-592-1964 or by email at lee@fbcpublishing.com.

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GUARDING WEALTH

Investing: taking risks in the new economy

Old economy, new economy. Finding safe off-farm investments in a perilous world

By Andrew Allentuck

It is the question closest to the hearts and digestions of most investors: How long can the good times last? The tech-heavy NASDAQ Composite index was up 26.3 per cent for the 12-month period ending June 7, 2017. Canada's S&P/TSX Composite Index rose a modest 7.7 per cent in the same period, restrained by flagging commodity prices, especially energy. Still, in a low inflation world, that's not a bad one-year gain in a very troubled world.

The future is not quite so bright. Inflation, the driver and indicator of such things as national gross domestic product figures, is low in the big industrial countries where it matters. Canada's Consumer Price Index is up 1.9 per cent on an annualized basis as of April 30.

Low inflation is not a bad thing. It makes debts easier to pay in devalued dollars, in effect giving borrowers credit to buy and borrow more. With low single digit inflation rates, borrowing is cheap and repayment relatively painless.

Not surprisingly, Canada is tapped out. Lousy retail sales and shrinking margins show it.

Canadian household debt at the end of 2016 was a worrisome 167.3 per cent of income, according to Reuters. That means we owe \$167.30 for every \$100 of pre-tax income — that means we own about two bucks for every dollar left over after income taxes. Consumer spending drives much of the economy; it's become weak according to many Bank of Canada warnings.

Perhaps because bonds pay so little and perhaps because there is so much cash sloshing around after nine years of recovery from the crash of 2008, our stock market is doing moderately well.

THE SOLUTIONS

What's an off-farm investor to do? The short answer is be very cautious about the market in general. These days, tempted by exceptional results from Alphabet (formerly Google), Amazon.com Inc., and Apple Inc., investors are chasing tech industry returns. The latest exchange traded fund to hit the market is the PowerShares QQQ Trust Series 1 ETF, a fund which tracks the NASDAQ 100 index that is heavy with Amazon and Netflix and other megatechs.

Within days of the fund's launch at the end of May, investors poured in US\$1.78 billion, a strong indication that they think the tech boom will continue, regardless of U.S. tax policy or trade relations. In this topsy turvy world, tech stocks, formerly regarded as high risk (remember the dot coms 17 year ago?) are now seen as safe compared to resources whose prices gyrate with the world economy and manufacturers whose fate is tied to tariffs.

In Canada, the counterpart to the



Off-farm investing is intended to spread risk and produce alternative income. Investing spare cash from farm profits in an agricultural commodity is not really diversifying.

American tech boom is centered on the pending legalization of marijuana. There are fortunes being made as companies transition from penny stocks to mid-caps, but it's a perilous path to invest in the legalization of recreational drugs. The market is wavering.

Shares in Canopy Growth Corp., a leading player in this emerging agricultural sector, recently traded at \$6.80, down from \$13 in February. Another marijuana stock, Aurora Cannabis Inc., was down from about \$3 in November 2016 to \$2 in early June. Cannabis Wheaton Income Corp., shares of which sold for pennies a few months ago, rose to \$1.50 in May and settled at \$0.98 in June. Cannabis Wheaton may do very nicely, or not, but it is at least as risky as the dot coms, which never had to face a problem of legality or environmental regulation that could seek to protect moose from being intoxicated if they graze on fields of dope. A new world of regulation lies ahead.

The cannabis companies have to compete in a market in which people can (legally or otherwise) grow their own product. There will be a mass of new regulatory hurdles, such as pesticide residues and chemical components, far beyond the elimination of criminal penalties for use or possession. Legal marijuana may be the future, but caution is essential. Pricing these companies' shares is a witches' brew of valuation, information on market share, and clarity of legality.

Investors who want to improve the ratio of probable gain to probable loss should stick with companies whose stocks offer dependable dividends based on strong earnings. The dividends are paid in good times and bad, helping with the psychological problem of wanting to sell a stock bleeding red ink. The instinct to flee danger is often stronger than confidence in the probability that good stocks will rise again.

Among the stalwarts of dividend

payers are chartered banks. Their earnings and dividends grow with the ever-expanding money supply. Then there are non-bank financial companies such as Power Corporation and Power Financial Corporation. They have dependable and rising dividends and deeply

entrenched lines of business in insurance and other financial services. As sources of non-bank dividends, they are worth a look, even though their trends are uninspiring. What makes up for their moribund stock price is the five per cent dividend each offers. Even if divi-

dends don't rise, this will give you a 100 per cent gain in 14 years if held in an RRSP.

In the end, stock investing is a spectrum of risk that moves from buying sure things, like dividends from major chartered banks, to buying dreams and schemes from novelties in the dope biz. You cannot make 100 per cent overnight in a chartered bank stock, but you could do it or at least could have done it with microcap marijuana companies headed for listing on the TSX. But the risk of loss is far higher in these fields of fancy than in dreary but relatively safe old industries.

Off-farm investing is supposed to spread risk and produce alternative income. Investing in any agricultural commodity whether banal like turnips or exotic like marijuana is not really diversifying. Farming is a high-risk business. Diversification should mean that money earned on the farm is safe and profitable somewhere else. In the choice between bravery in the unknown and patience with the proven, I'll stick with the old reliables that are legal, profitable, and ooze cash. **GM**

Andrew Allentuck is author of "When Can I Retire? Planning Your Financial Life After Work" (Penguin, 2011).



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SOILS AND CROPS

How water comes out of the ground

Water comes to the surface in many different ways



Les Henry

In my last column I looked at water entering the ground and the factors that control that flow. This time, I'll look at water coming out of the ground and the clues it leaves about its origin.

CONTACT SPRINGS

A contact spring occurs when the contact zone between a very sandy soil and a finer textured soil comes to or near surface. The thickness of sand must be sufficient to have a water table form within the sand. That usually means sand dune areas. If the sand is thick enough to form dunes with big winds it is likely thick enough to form a water table.

As the water flows underground from higher to lower elevation it will come out as a spring at the point where the contact between soil types comes near ground surface.

The first measure of water quality is the Total Dissolved Solids – the total minerals (solids) dissolved in the water. TDS can be determined by a detailed lab analysis. But, for many of our waters, a good first approximation of TDS in parts per million can be obtained by measuring the Electrical Conductivity (EC) of the water. EC is easily measured in the field, as shown in Photo 1.

Units of EC are microSiemens per centimetre ($\mu\text{S}/\text{cm}$), but there's no need to worry about that. This measurement, $\mu\text{S}/\text{cm}$, is about equal to TDS, in ppm.

In Saskatchewan, the South Saskatchewan River is the standard of comparison and has an EC of about 350 to 500 $\mu\text{S}/\text{cm}$. Sand point wells are about 500 to 1,000 $\mu\text{S}/\text{cm}$. Most farm wells at depths of about 100 to 300 feet have EC of about 1,500 to 3,000 $\mu\text{S}/\text{cm}$.

Contact springs from sand dune areas are usually very good water with few dissolved minerals. The water has passed only through sand so has had no chance to pick up a lot of minerals and be salty and hard. For a complete description of a very pretty little contact spring near Outlook, Sask., owners of Henry's Handbook of Soil and Water can check out Page 141.

Contact springs can occur on farm fields as well. If you find yourself stuck on a side hill, it is likely a contact spring.

ARTESIAN SPRINGS

Artesian springs occur when pressure from an aquifer is suf-

ficient to force water through the soil and create actual water flow at the soil surface.

Photo 2 shows an artesian spring I have been watching for many years. It is on the back road to my top quarter and I drive by many times each summer. The salts on the road that can be seen in the picture are there after any significant dry spell. Years ago, water would only flow only after spring snow melt, but now water flows many times a year after any significant rain.

In this case the actual flow does not occur at the lowest point. I suspect that over the centuries, the water found a preferred pathway that has eventually become like a pipe.

SALINE SOILS

Saline soils are often the result of artesian flow that maintains a high water table, even in dry cycles. Capillary rise finishes the job of bringing water to the soil surface where it can evaporate and leave salts behind. Very saline soils can occur from quite good water in an aquifer beneath. It is the concentration by evaporation over the centuries that leaves the soil so salty.

Saline soils are *prima facie* evidence of groundwater discharge.

In a dry cycle those salts can blow around like snow and cause havoc with power transformers, get sucked in to engines and contaminate the soil they land on.

ICE MOUNDS

Artesian discharge can also result in ice mounds. They show up best in the spring when all the snow is melted. They look just like slow melting snow but if you take a walk you soon find out it is really ice.

UNSTABLE GROUND

Pressure from an aquifer beneath a site can result in unstable ground and lead to building foundation failure and leaning buildings.

In conclusion, when we see weird and wonderful things at the soil surface, the underlying cause may lie deep underground (pun intended). GN

J.L. (Les) Henry is a former professor and extension specialist at the University of Saskatchewan. He farms at Dundurn, Sask. His book, "Henry's Handbook of Soil and Water," mixes the basics and practical aspects of soil, fertilizer and farming. To order a signed copy, send a cheque for \$50 (includes shipping and GST) to Henry Perspectives, 143 Tucker Cres., Saskatoon, Sask., S7H 3H7.



Photo 1. Chukwudi Amadi checks out the EC of a contact spring on Highway 219 south of Saskatoon and just north of Dakota Dunes Casino on May 31, 2017. Chukwudi is instructing in undergraduate soils lab at the University of Saskatchewan and is keen to learn about Saskatchewan conditions.



Photo 2. An artesian spring near my Dundurn farm. May 14, 2011.



Photo 3. A salt flat just east of Asquith, Sask., in May 1978. The salt crust is just like snow and is there because of artesian discharge.



Photo 4. Salts blowing very close to the Photo 3 site. This photo was taken on May 5, 1959 by Bob McKercher, soil science professor emeritus from the University of Saskatchewan and recent inductee to the Sask. Agriculture Hall of Fame.



Photo 5. Each spring I drive by this ice mound on the Curtis Block farm, about one mile from my Dundurn farm.



These old wooden elevators at Laura, Sask., had developed some peculiar angles by the late 1980s when I took this photo. The Tessier aquifer is underneath and flows from a relatively shallow depth. In 1946 the Saskatchewan Wheat Pool elevator in Laura drilled a 28-foot test hole that flowed, but no well is recorded.

CAN'T TAKE THE FARM FROM THE BOY

“One more” detail of farming: the yard

Long-time farmers take farmyards for granted, but looking after a farmstead is a big job



Toban Dyck
tobandyck@gmail.com

I am a farmer. Most likely you are, too. This means more on some days than others. Today, it means that frost boil at the mouth of our carport needs to be dealt with. Tomorrow, who knows.

On the farm right now, I think about the future. About what looms. I look up through the window and see the yard I grew up on; the yard my parents worked tirelessly to maintain; the yard with a constant and erratic flow of machines driving in every possible direction and on every possible surface.

The dandelions are my problem now.

It's intimidating. Then, lots about farming is intimidating.

There are the things that need to be done. And there are the things that I feel compelled to do, as if as recreations of my past. There are certain areas of lawn that don't need to be mowed, but before I arrive at a decision while sitting on the garden tractor, that level of consciousness seemingly able to control my limbs without me knowing, has already done it. I can't shake the urge. Our yard and that grass have to look that way, and I have no idea why. I defer to psychologists on that one.

Since Jamie and I bought the farmstead and moved into my childhood home last September, it's been a whirlwind. We've been busy, and the realities of our current stage have yet to become fully clear.

What has become clear is that to farm and to live on a farm is to have an open eye to the immediate and distant future. Agronomically, this could involve decisions surrounding soil health, new emerging crop types, potential markets, machinery purchases, and, of course, buying land. Without these considerations, farms become stagnant. And I've heard enough credible farmers say that to remain in one place is, in effect, to move backwards.

If it's applicable, we see our lives on the farm as a staircase that continues beyond eyeshot. We're up a few steps from where we were when we moved here in 2012, and we're looking forward to seeing what the next few will look like.

That is the deep stuff — the stuff of hard science, coffee-shop “science,” and the thickness of hearsay and tradition in-between. Well, read on, because this is not about any of that. This is about what it takes to run a yard and, I guess, the importance of doing so.

THE TRICK IS IN THE DETAILS

The towering poplars sheltering our yard from the north have only a year or two left in them. I remember when they were planted. I was too young to really help and not clairvoyant enough to know that one day dealing with these trees would be my responsibility. The evergreen trees in front

of that row are also facing death, unless they receive some care.

Jamie's garden is still in front of the mobile home we used to live in, which now sits empty waiting to be rented or purchased. She has expressed interest in moving her garden, but we have yet to decide on the ideal spot.

We'd like more animals in the future, so penning is on our minds, and that requires a plan — one that will hopefully incorporate our

chickens and allow for growth. Perfection is the enemy if done in any context, but especially so in this one: we're leaning to make moves.

The rectangle of brush where the farm's long dormant hog barn used to sit begs for some kind of development. I mow it, but only for aesthetic reasons.

The gravel around our bins needs to be sprayed and kept clean. And the long grass around each

tree and pole and building needs to be trimmed. That is, if I am to keep the same yard my parents did.

It's overlooked, I think, the yard maintenance thing. I look up through the window and see a large, beautiful yard that is still largely the way it is because others have made it so. I see one thousand and five things that need to be done soon and a whole bunch of projects that we'd like to get a head start on.

The farmstead, the yard, is

where we are on the staircase. We're looking ahead as best we can, but where those next steps will lead and when we'll take them is entirely unknown. This is what I love about farming.

We'll plant a new shelterbelt and see where that takes us. **GN**

Toban Dyck is a freelance writer and a new farmer on an old farm. Follow him on Twitter @tobandyck or email tobandyck@gmail.com.

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How to repair a faulty fuel gauge

Repairing or replacing a fuel level gauge system on older machines

By Scott Garvey

One fault owners can almost certainly expect to develop on older machines and trucks is a fuel level gauge that eventually stops working.

Repairing that problem isn't too difficult, even if OEM replacement parts are no longer available. There are plenty of aftermarket components that can do the job. However, even though all fuel gauge systems use the same two basic components, a gauge on the dash and a sending unit in the tank, there are some differences in how each one functions, depending on its design. And they need to be compatible with each other. Getting the right pair isn't just a matter of just picking up any old parts off the shelf at the local auto parts store.

Here's a look at how these systems work, how to determine exactly which parts are at fault and what you need to replace them with.

THE GAUGES

In older machines and vehicles there are two common types of gauges: thermostatic and balancing coil. (Newer equipment and vehicles may have gauges controlled by a microprocessor.)

Current flowing through a thermostatic gauge heats a bi-metallic strip, causing it to bend. That bending motion is linked to the gauge pointer and causes it to move a distance equal to how much fuel is in the tank.

Balancing coil gauges, on the other hand, use competing magnetic pull from two small electrical



Even if OEM parts are no longer available, it's possible to repair or rebuild a fuel gauge system in older machines with generic, off-the-shelf parts.

coils to move the needle one way or the other. The difference in current flow, and therefore magnetic pull, between the two coils is determined by how much resistance is created by the sending unit in the fuel tank. Resistance from a sending unit also determines the amount of heat created in a thermostatic gauge.

The only practical difference between these gauges is the balancing coil gauge needs an additional wire run from it to a chassis ground. No big deal.

THE SENDING UNIT

As the sending unit float moves up and down riding on top of the fuel in

the tank, the resistance to current flow between the gauge and chassis ground increases or decreases.

But how much resistance a sending unit creates and whether it creates more or less when the tank is empty varies. Sending units in some older GM vehicles, for example, create maximum resistance when the



The three connection points on the back of this gauge indicate it's a balancing coil gauge and needs an additional ground wire. That's unlike a thermostatic gauge that only has two wire connection terminals, one for power in and another out to the sending unit.



Battery power flowing to thermostatic gauges on older machines may be routed through a regulator, like this one on the back of a dashboard cluster, to step the voltage down to about five volts. Routing full 12-volt power to these gauges will damage them.

tank is full. Older Ford and Chrysler vehicles are exactly the opposite. Even if a sending unit creates resistance in the correct way for a gauge to work, it needs to operate within the same range the gauge is calibrated for.

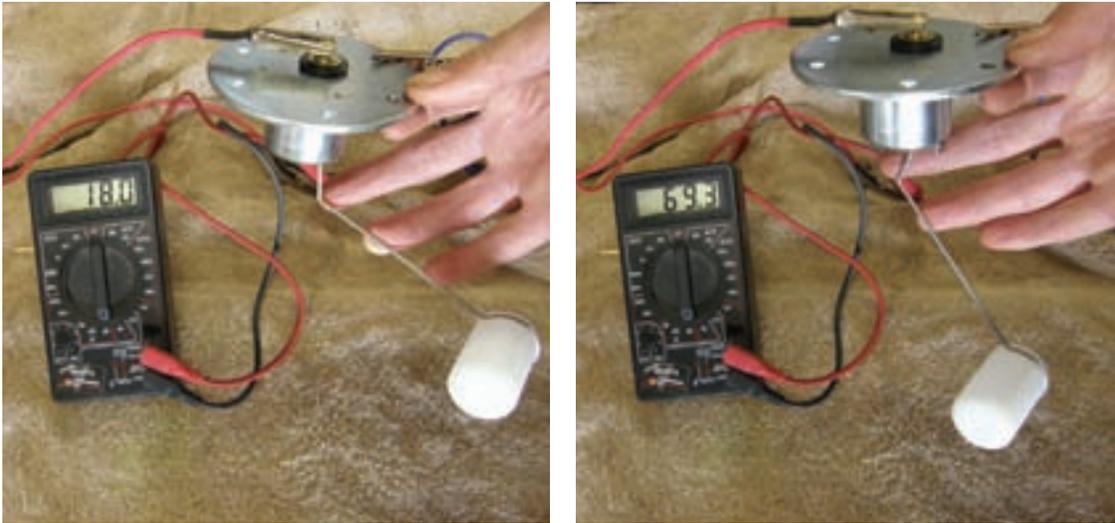
The good news is either type of gauge, thermostatic or balancing

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With the sending unit removed from the tank, its Ohm range can be determined using a multimeter as shown. In the left image, the low ohm number reads near the full-tank position, and the higher number on the right reads when the float is near the empty position. The readings indicate this sender is a 73-10 Ohm type.

coil, will work with a sending unit as long as the resistance range is compatible.

DIAGNOSING THE FAULT

A couple of simple tests will determine whether the gauge, the sending unit or both are faulty.

To test the gauge, disconnect the wire leading to the sending unit and connect it to a good chassis ground. Or disconnect it at the gauge and run a separate wire from the gauge terminal to a ground. (The sending unit wire terminal on the back of the gauge will likely be marked with an "S.") Turn on the ignition key and ensure voltage is available at the other gauge terminal (likely marked with an "I"). For gauges designed to work with low resistance when the tank is full, which is the most common arrangement, the needle should move all the way to the full position. If it doesn't move, the gauge needs to be replaced.

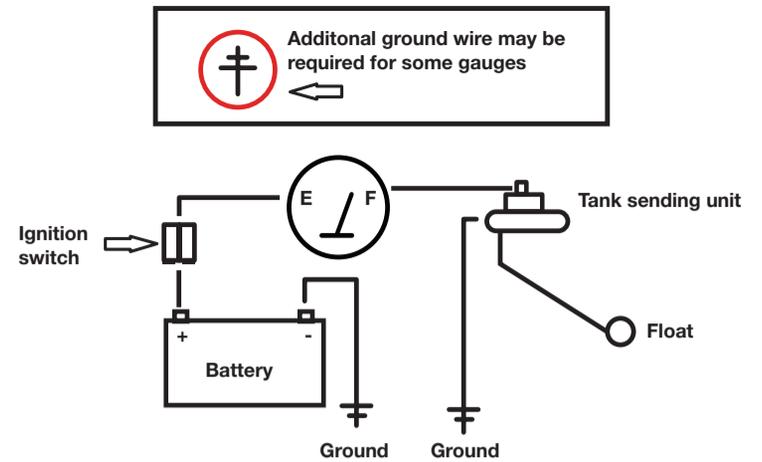
The best way to test a sending unit is to remove it from the tank. Using a multimeter set to read ohms (resistance to current flow), place the positive lead on the connection terminal and the negative lead on the body of the sender. Move the float up and down to see if there is continuity (current can flow) and note what the resistance range is. If the sending unit is working, knowing the resistance range measured by the multimeter will be important in order to match it to any new aftermarket gauge.

It is possible to do a limited test on a sending unit without removing it from the tank. Just remove the wire leading to the gauge and attach the leads from the multimeter the same way as before. If the sender is working there will be a resistance reading. And if you know approximately how much fuel is in the tank, you can make a good guess at the resistance range.

For example, if the tank is half full, you get a reading of 45 ohms and you're working on an older GM truck, you probably have a 0-90 ohm sending unit.

If the multimeter reading shows the sending unit has no continuity (won't let current flow through it), the sender is faulty. GN

Scott Garvey is machinery editor for Grainews. Contact him at Scott.Garvey@fbcpublishing.com.



Fuel gauge systems use a simple wiring connection. Current flows through the gauge to sending unit, which creates variable resistance between the gauge and ground. Balancing coil gauges will need the additional ground connection indicated in the red circle.

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Kubota

NEW EQUIPMENT

More new products from John Deere

The brand adds new implements and updated technology to its line up

By Scott Garvey

Although the new S700 Series combines were the flagship machines in John Deere's May launch of new products for 2018, there were several other additions on display at a debut event in Moline, Illinois. Here's a look at what else the green brand pulled the wraps off.



PHOTOS: SCOTT GARVEY



PHOTO: JOHN DEERE

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FRONTIER EQUIPMENT

Deere's Frontier brand equipment line grows for 2018 with two new additions: a new vertical tillage implement and a three-point hitch mounted sprayer. Marketing reps see these products appealing to smaller-acreage producers or others who want smaller equipment to deal with localized problems larger machines can't easily handle.

The LS11 Series of three-point hitch mounted sprayers debuts with available boom sizes ranging from 25 to 40 feet. They incorporate some of the features available on larger pull-type sprayers, including breakaway booms and optional foam markers at the ends. Booms come standard with single nozzle bodies; although, triple nozzle bodies are available on the 40-foot boom.

Two different tank sizes are available, 250 and 300 U.S. gallons. The tanks have a teardrop shape, which allows the liquid to fully drain. That shape also places most of the weight closer to the rear of the tractor to reduce stress on the hitch arms. Fluid pumps can be ordered with either PTO or hydraulic drive.

An in-cab rate controller gives the operator the ability to make spraying adjustments or turn each side of the boom on or off for a measure of section control.

Also debuting under the Frontier brand is the VT17 vertical tillage tool, which is available in working widths of 10 to 15 feet. It can run through the fields at speeds up to 10 m.p.h., and the disc gang angles are adjustable from 0 to 12 degrees. Depth settings can be fine tuned using a pin-and-clip adjustment system. Disc blades of 20 or 22 inches are available.

Horsepower demands for the four VT17 models ranges from just 85 to 150.



The road to autonomy

A prominent landmark within the city of Moline, Illinois, home to John Deere's World Headquarters, is the John Deere Pavilion. It houses a museum-like display of current Deere equipment and details some of their evolution over the years.

One of the displays inside the pavilion is the concept autonomous tractor the brand began R&D work on back in 1997. About the size of one of Deere's current 4 Series tractors, it was built without an operator's station.

With decades of autonomous tractor research and development behind all the major brands, a future in which robotic machines work farm fields is coming closer. This little robotic tractor represents one of the first major R&D efforts by the green brand to make that a reality. Some of the systems created during that project have already been incorporated into existing equipment lines.

Scott Garvey



PHOTO: SCOTT GARVEY

PLANTER TECHNOLOGY

Both of Deere's MaxEmerge 5e and ExactEmerge planters get an improved digital component for 2018 with SeedStar 4HP. It works through the Gen 4 CommandCenter 4600 display in the tractor to provide better monitoring of planter functions and performance. Multiple bar charts can be viewed simultaneously, and it has a "zoom" feature for detailed row-by-row information. Like much of Deere's latest digital products it is customizable and gets simplified, more intuitive screen formats. Operators can also save configuration settings from one season to the next.

SeedStar 4HP also includes the new Easy Fold feature to make getting the planter ready for road transport an easier task. SeedStar replaces the previous manual frame-fold box by controlling and automating flow through the tractor SCVs.

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



4640 UNIVERSAL DISPLAY

John Deere has added the new 4640 display monitor to its digital hardware line up this year. The 4640 is meant to be a lower-cost option that will allow producers to retrofit older tractors and get the benefit of more up-to-date precision farming practices.

The 4640 supports the most common John Deere applications, including AutoTrac, documentation and section control. It includes more on-screen help functions and diagnostic information to help operators. I also has a simplified work setup app, which Deere claims reduces the typical amount of time it takes operators to get set up.

The monitor also has an on-off button on the back so it can be turned off or rebooted without having to shut down the tractor. It is fully compatible with John Deere tractor models going as far back as the 30 Series. **GM**

Scott Garvey is machinery editor for Grainews. Contact him at Scott.Garvey@fbcpublishing.com.

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Brandt

Talking trash about seeding equipment

SeedMaster shows single-row concept toolbar designed to help farmers cope with residue

By Scott Garvey

SeedMaster, a brand that often gives farmers a glimpse of its new technologies, chose to show a mock up of its one-row drill concept at Canada's Farm Progress Show in Regina in June.

"It's something that we're working with, testing a few ideas on how to better improve residue flow through a machine, but also how to get all the openers on one row," said Greg Vennard, engineering manager at SeedMaster, when he spoke with *Grainews* at the company's display. "Typically we build all our drills with the openers on three rows, which makes the frame of the drill quite deep. So when you are contouring over hills, the openers aren't as accurate as they could be if it was all on one row."

According to Vennard, it's the desire to improve placement accuracy that has company engineers experimenting with a toolbar design similar to that used on planters, which typically have a single row of openers; but in a no-till environment, trash build up becomes a major obstacle for implementing that design on drills.

"The objective is to get all of the openers on one row so the knives are all on the same plane," said Vennard. "The problem with that in a hoe drill environment is it picks up residue and doesn't clear it as well."

To make a single-row drill possible, SeedMaster's approach is to include a row of ground-driven, spiked wheels that grab surface trash and force it through the opener row to prevent material piling up ahead of them.

All of the spiked wheels are linked through a flexible shaft system that gives them the ability to contour over uneven terrain. Linking them together prevents one wheel from stopping when soil and trash pile up in front of it. Drive from the other wheels in the row keeps each wheel turning and forcing material through.

With a trash wheel positioned between each opener, the design also offers allows for faster travel speeds in the field, because the wheels prevent soil from one opener from being thrown to the side and covering adjacent seed rows, which has been a limiting factor for drill speeds.

"You actually get a little bit of increased travel speed as well, because the hindrance is how much soil gets thrown (to the side)," said Vennard. "With these wheels running in between the knives the soil hits the wheels."

Another other advantage is in turns and gradual curves through the field, the row spacing stays the same. "When you have a deep frame, that row spacing varies," he notes. A single-row frame would also make for a lighter drill, requiring less horsepower to pull.

Since the drill design hasn't been finalized, no pricing details are

available, but less steel in the frame might offset the cost of the trash wheel system.

"We're still working with it, so I'm not sure when there will be a production release," said Vennard. "Right now we're testing on 15 (inch row spacing). Everything is still in evolution." **GN**

Scott Garvey is machinery editor for *Grainews*. Contact him at Scott.Garvey@fbcpublishing.com.



SeedMaster showed the public a mock up of the single-row drill concept its engineers are working on during Canada's Farm Progress Show.



Spiked, ground-driven wheels, all connected by a flexible linkage, help material flow between openers.

PHOTOS: SCOTT GARVEY



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NEW EQUIPMENT

KUBOTA EXPANDS ITS SUB-COMPACT TRACTOR LINE

Brand adds four new BX80 Series diesel tractors to its range of offerings



PHOTO: KUBOTA

Four new BX Series sub-compact tractors from Kubota offer some high-end features and a three-cylinder diesel engine.

By Scott Garvey

Most farmyards have a lot of grass to cut to keep things tidy around all the buildings. Cutting those areas can often be a tough job for run-of-the-mill lawn tractors. That's where the much more sturdy sub-compact tractors on the market today really shine. They rely on more robust drivelines and are really miniature ag tractors. Recently Kubota has announced it's ramped up its offerings in the 18 to 25.5 horsepower range of sub-compacts with four new BX80 Series models.

They are the latest iteration of the BX Series, which was first introduced in 2000. These tractors get three-cylinder diesels under the hood that supply the higher torque numbers you'd expect from a multi-cylinder engine. They're mated to the brand's hydrostatic transmission for infinite speed settings up to a top speed of 13.5 km/h, and a four-wheel drive system delivers that power to the ground.

For those small materials handling jobs, like filling potholes in the farmyard driveway, the BX80 models can be mated to the LA344 "Swift-tach" front-end loader, and a new four-point front hitch comes ready to connect to front-end attachments like dozer blades or snow blowers. The power drive system up front can be connected with just the push of a lever.

At the rear, hydraulic SCVs use the updated flat-faced couplers that don't leak as easily as other styles and can be connected under pressure. They can deliver up to 23.5 litres/minute of hydraulic flow. The tractors also offer a live PTO, and to keep the engine running longer, these new machines get a 23-litre fuel tank.

These tractors bring down many of the kinds of features you'd expect to find on larger tractors, like power steering, cruise control, tilt steering wheel and a high-back seat with armrests. And there is, of course, a cup holder and a 12-volt charging port.

The BX23S model is designed to work with an attached rear backhoe. **GN**

Scott Garvey is machinery editor for Grainews. Contact him at Scott.Garvey@fbcpublishing.com.

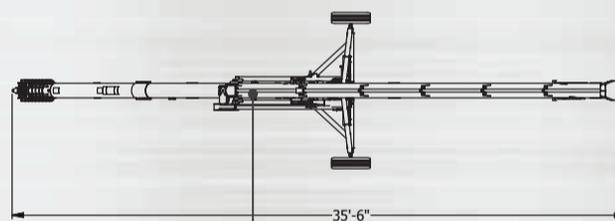
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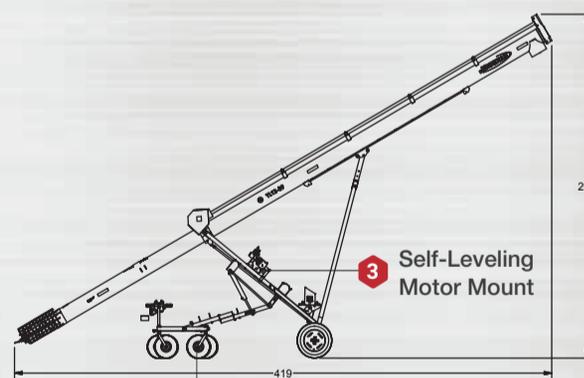
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SPECIAL EVENT FEATURE



PHOTO: FARBOY PRODUCTIONS

Now in its third year, Ag in Motion is Western Canada's only major outdoor farm show, where you can see, hear and feel the latest in ag technology. It will be held July 18-20 at Langham, just 15 minutes northwest of Saskatoon. For more information or the full program, visit www.aginmotion.ca.

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More than 25 companies will showcase their products in more than 100 acres of crop plots

At Ag in Motion, seed, crop protection and fertilizer companies, as well as grower associations and industry members will showcase field crop products as they should be seen — in the ground.

Ag in Motion is home to over 100 acres of crop plots from over 25 companies and organizations, with both numbers growing every year. This number is the highest of any outdoor show in Western Canada.

“Not only is this a great way to see a large number of companies in one place, it also provides an excellent opportunity for demonstrations to take place from individual companies and organizations. It’s the best place for conversations and education to take place,” says Dan Kuchma with Ag in Motion. “We give farmers the chance to see for themselves the different options available to them, and the tools to make the most informed decisions.”

New for 2017 are expanded plots for a number of companies, including an enormous 500x170-foot plot from Crop Production Services, as well as the addition of eight companies and associations to the lineup. Saskatchewan Pulse Growers is among the expanded exhibitors this year, and has added large-scale pulse crop plot demonstrations for attendees to learn about growing pulses in addition to the main site where varieties will be showcased.

The pulse demo area will feature weed control in peas, lentils, and soybeans, showcasing herbicide layering options for increased weed control and a demonstration on pulse fertility, which will examine the nutrient requirements for pulses.

“Weed control is the No. 1 concern with pulse growers and we wanted to showcase the options that are available to them,” says Sherrilyn Phelps, agronomy manager, Saskatchewan Pulse Growers. “The fertility project is more of an educational demonstration to show growers that nutrients are still important for growing pulses and management of phosphorus is something that we should be paying more attention to.”

Phelps adds, “Our demos will help attendees gain a better understanding of how to manage weeds and resistance using an integrated approach combining agronomics and herbicides, and will help them implement what they learn on their own farm. Understanding nutrient requirements for pulses is important for optimizing yields and maximizing returns. A healthy crop can better fight off disease and withstand stress, and a balanced approach to nutrient management will help ensure sustainability of a rotation.”

Ag in Motion welcomes FP Genetics, Yara, Farmers of North America, Thunder Seeds, Sask Canola, Taurus Ag, Northern Quinoa Production Corp. and Gowan, all featuring crop plots for the first time at the show in 2017.

Returning companies include Alliance Seed, ATP Nutrition, BASF, Bayer CropScience, Brett Young, CANTERRA SEEDS, Cargill, Compass Minerals, Crop Production Services, DEKALB, Dow AgroSciences, Engage Agro, ESN Smart Nitrogen, Monsanto Canada Inc., Rack Petroleum, Saskatchewan Pulse Growers, SeCan, Stroller Enterprises and Union Forage.

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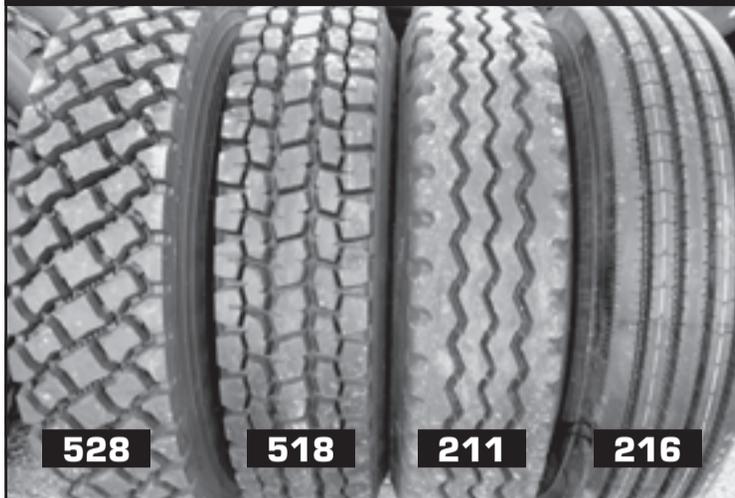


PHOTO: FARMBOY PRODUCTIONS

Eight new companies and organizations will have displays at this year's show.


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SPECIAL EVENT FEATURE

Managing herbicide resistance

Gowan Canada will host a speaker series on Wednesday and Thursday

Diversity is defined in the dictionary as "the condition of having or being composed of differing elements." In weed control, diversity means using multiple strategies, or an integrated weed management approach. For herbicides, this means using all of the modes of action available to reduce the risk of weed resistance.

This may be obvious, but we aren't doing great when it comes to diversity in our herbicide choices. The latest estimates are that as much as 50 per cent of the crop area in Western Canada could be affected by Group 1- and/or Group 2-resistant wild oats. Market research shows 74 per cent of wheat acres, 61 per cent of barley acres, 100 per cent of pea acres and 42 per cent of canola acres saw a Group 1 or Group 2 in 2015. This is compared to Group 3s and 8s which were used on less than five per cent of acres.

The imbalance exists because of the ease of use of post-emergent herbicides compared to soil residuals. Also, the use of post-emergent herbicides fits no-till and min-till systems very well. However,

in some cases the exclusive use of post-emergent herbicides has resulted in resistance. And with increased use of glyphosate we are now seeing resistance to some weeds and researchers warn that glyphosate-resistant wild oat could be on the horizon.

It is time to get a more balanced approach. Increased use of Group 3 and Group 8 is a good component of a weed-resistance management strategy. A benefit of adding a soil residual is the majority of the weeds won't be exposed to the post-emergent herbicide. A soil residual will remove around 80 per cent of weeds before they emerge, drastically reducing exposure to the post-emergent mode of action.

If you are already incorporating Group 3 and Group 8 in your plans — great job. If not, start now — before resistance becomes too costly. Like for farmers in Australia, the U.K. and U.S. who now spend over \$100 per acre on herbicides in some cases or are paying people to hand rogue weeds in others.

Gowan's message is straightforward: change your approach before you are forced to!

Learn more about resistance management from technical experts from the U.K. and Australia during your trip to Ag in Motion. On Wednesday, July 19 and Thursday, July 20, Gowan Canada will be hosting a speaker series.

Rob Plaice, technical manager for Gowan United Kingdom and Ireland will provide an overview of herbicide-resistance issues in the United Kingdom. Next up will be Craig Hole, an Australian farmer and agronomist at Landmark, one of Australia's largest distributors. He will provide an overview of herbicide-resistance issues faced by Australia's agriculture industry.

These educational sessions begin at 9:30 a.m. in the Agri-Trend Knowledge Tent (Booth 645). Seating is limited, and priority will be given to pre-registered guests. To register, visit www.aginmotion.ca/managingresistance.

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SPECIAL EVENT FEATURE



Livestock Central adds exhibits and programming

Cattle farmers can not only take a look at the various systems on offer, they can actually see them in action

Livestock Central at Ag in Motion has expanded the scope of experience for visitors this year. This is sure to be a marked stop for livestock producers on their visit to the expo. BMO Financial Group is proud to present Livestock Central this year as it celebrates its bicentennial.

"We are overwhelmed by the enthusiasm we have seen to expand this area of the expo from exhibitors and industry stakeholders alike," says Michael Hargrave, livestock co-ordinator for Ag in Motion. "Livestock Central will have exhibitors and events to pique the curiosity of every visitor coming through."

New this year, Wednesday, July 19 will be "Beef Day." As part of Beef Day, a new speaker series organized in partnership with the Saskatchewan Ministry of Agri-

culture will focus on topics specific to the production and care of beef cattle.

A key feature of Beef Day in the Livestock Pen will be a low-stress cattle-handling demo featuring internationally recognized stockmanship instructor Curt Pate.

"With the growing public scrutiny of livestock production, improving our livestock-handling practices will help the sustainability of the cattle industry," Pate says. Be sure to mark down the start of Pate's demos in the Livestock Pen at 12:30 p.m. and 3:30 p.m.

The livestock-handling demo has grown this year to include more handling systems from 2W Livestock Equipment, Stampede Steel Inc., Morand Industries and Tuff Livestock Equipment.

Starting every day at 11 a.m.,

cattle farmers can not only take a look at the various systems on offer, they can actually see them in action, providing a first-hand experience of what a new system can do for their operation. Eliminating handling frustrations, reducing processing time, and ultimately providing the best environment possible for working directly with animals is an interest to anyone working with livestock.

Dairy farmers attending Dairy Day, the first day of the show, can start their morning off right with a delicious brunch while networking with friends and colleagues. The VIP Dairy Producer Brunch will take place in the Special Events Tent from 8:30 a.m. to 10:30 a.m. Look for your invitation and admission pass in your provincial milk marketing board mailing.



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WeatherFarm will be on full display at the 2017 Ag in Motion Farm Expo. Two permanently installed weather stations will be showcased around the site, along with a demo station and the WeatherFarm.com online platform available in the booth for visitors to see up close.

One weather station has been operating at the Ag in Motion site since 2016, providing the exhibitors and plot growers with real-time weather, forecasts and historical data.

WeatherFarm continues to provide unique tools to farmers, offering real-time temperature, wind and rainfall data right from a station on their own farm. Glacier FarmMedia has been working on updates to the WeatherFarm program with new features such as improved weather alerts and crop tools, predictive radar and advanced detailed forecasting. It also plans to offer commentary and analysis on the impacts of weather events to farming operations.

Make sure to stop by and visit the Glacier FarmMedia booth to check the weather and discuss all the decision-making tools available through WeatherFarm and a weather station on your farm. You will be able to sign up on the spot and by purchasing a weather station, join the largest on-farm weather network in Canada.



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SPECIAL EVENT FEATURE




New Ride 'n' Drive feature: self-propelled sprayers

Sprayers will be lined up and driven one at a time by interested buyers

Choosing the right machine the first time saves growers time and money – in the purchase and in the application. Investing in a sprayer is a large financial commitment, so it's important to know what's on the market to truly meet your farm's needs and to understand how the different models compare in performance. That's why a new Sprayer Ride 'n' Drive will be featured for the first time ever at Ag in Motion this year.

"One of the great features of an outdoor show is the ability of attendees to test out and learn about equipment, no matter how big or small, before they buy," says Paul Roper, Ag in Motion demonstration co-ordinator. "The Sprayer Ride 'n' Drive is a great chance to learn about different equipment makes and models, and speak to the people who know them best."

Taking place from 10 a.m. to 3 p.m. daily in the Demonstration Field, each company will have its own "pit" area in the large demonstration space. Sprayers will be lined up and driven one at a time by interested buyers for a maximum of 10 minutes; however, serious buyers will have the opportunity for further testing following the Ride 'n' Drive's conclusion. It will be ongoing throughout the day with no appointments, so interested attendees should arrive early to try out any equipment they may be interested in purchasing.

Attendees can expect to see and test equipment from manufacturers like Massey, New Holland, John Deere and Versatile.



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AIM features first-ever combine demo

Six machines will make daily passes through a field of fall rye

There's never been anything like this in Western Canada before. See, first hand, how a fall rye crop feeds into and passes through six machines as they line up side by side to harvest in the Ag in Motion demonstration field.

Fall rye has been seeded at the Ag in Motion site and has been growing all summer long in order for it to be as mature as possible for July's demonstrations and to best simulate fall harvest conditions. The 15-acre plot will be straight cut by the participating combines.

This demonstration will feature examples of these monstrous machines from manufacturers like Claas, Versatile, New Holland, John Deere and Massey. Redekop will also have a presence in the demo, showcasing its unique combine header.

The combine demonstration will kick off the Ag in Motion field demos at 12:30 p.m. Directly following, at 1:30 p.m., the tillage demonstration will highlight and compare equipment for one-pass seedbed preparation. An interactive Sprayer Ride 'n' Drive will be ongoing daily from 10 a.m. to 3 p.m. as well.



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- Michelin
- ABF Machines
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- Leon's
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- Salford
- RAM Trucks
- Toyota
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- New Leader

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ANIMAL HEALTH

Facts about antimicrobial resistance

While the industry is already doing a good job, there is ongoing room for improvement



ANIMAL HEALTH
Roy Lewis

There have been volumes written on antimicrobial resistance (AMR) in the last several years. And it is important to remember just how good the Canadian cattle industry is doing in managing AMR and look to future changes veterinarians may make in their recommendations.

For those of you craving more detailed information, there have been several very good brochures published and websites established providing factual and current information on the subject. This knowledge is important anytime we try to explain to the average urbanite what we know and how the entire industry is really following the guidelines about prudent usage of antimicrobials.

We hear the public and some industry sectors use terms like “raised without antibiotics.” The fact is, reducing antibiotic use can have severe ramifications from an animal welfare perspective. They are effective and safe. We have established withdrawal periods by law so there are no antibiotic or other drug residues from products such as NSAIDs or vaccines in our meat or milk. The established withdrawal times are set for each product.

The best printed brochure I have seen is the “Worried about Antibiotic Use and Resistance in Cattle” put out by the Alberta Beef Producers and available for anyone across Canada. It explains the four main categories of antimicrobials including Category One products, which also have very high importance in human medicine. They give examples of products we use in cattle like Excede or Baytril. This category makes up less than one to two per cent of the antimicrobials used in cattle production. But we must still think twice before we use them and only use the Category One drugs for treatment of severe medical conditions like a bad pneumonia.

Veterinarians continually advise on the least-critical product category that is still likely to be effective on the condition at hand.

I believe veterinarians, when they are doing autopsies, are doing more culture and sensitivities tests, especially when dealing with cases that have been unresponsive to drugs that previously worked.

This means the lab grows the bacteria causing the illness and uses little discs impregnated with antibiotics to actually see which ones work. This gives us a much better scientific approach to treatment and should provide a higher success rate. The issue is it can take a couple of days to test and get results, so in the meantime we as veterinarians must prescribe a treatment often based on previous protocols and success rates.



An important part of reducing the need for antibiotics includes good beef herd management practices which reduce stress and maintain animal health. Part of that includes a sound herd vaccination program reducing the risk of disease.

VERY LOW RISK

The possibility of getting resistant bacteria from cattle to humans is very remote because first very few Category One drugs are used. Plus the resistant bacteria would need to get through the packing plant and all the sanitary precautions used such as steam sterilization, UV light and a very clean environment through the cooking process. The bacteria have to survive all that, then get into a human who has been prescribed the same antibiotic by the doctor. This is a very, very unlikely chain of events.

There is now a research cluster led by researcher Dr. Tim McCallister at Agriculture Canada's Lethbridge Research Centre, together with researchers from the cattle industry and veterinary colleges, looking at all these potential pathways. The teams is looking at all possibilities and finding very positive evidence the industry is doing its due diligence to protect both livestock production and humans. A great quote from veterinarian Dr. Craig Dorin of Airdrie: “It is our privilege and not our right to be able to use antibiotics in the animals we take care of.”

In all the surveillance being done in the industry, drug resistance levels are very low in beef. That doesn't mean, however, they can't increase. If resistance is found, the bacteria are resistant to most antibiotics in the same family of drugs. Veterinarians know this and will prescribe a different family of antibiotics as needed.

Today veterinarians are much more involved with antimicrobials

that are used in production animal medicine, especially non-prescription products commonly administered in the feed or water. More than 75 per cent of the drugs are used in feed, so enhanced oversight at this level is where you as producer will see the most changes.

These are all positive steps in reducing overall antibiotic usage where possible and using the most effective ones for the condition at hand.

GOOD MANAGEMENT PRACTICES IMPORTANT

Among the first steps — growth-promotant indications are being removed from antibiotic labeling this year. Most growth-promotant products contain antibiotics and often it is the reduced disease incidence that results in increased growth as a secondary benefit. But going forward this will require your veterinarian having a medical reason to prescribe the products.

More good information is available on the Beef Cattle Research Council (BCRC) website at www.beefresearch.ca/amr. Along with reading material the site also offers a seven minute video that is worth watching by everyone in the cattle industry.

Producers (and veterinarians) need to get back to management practices that we have known will minimize sickness and hence reduce antibiotic usage. For example, calves receiving adequate quality and quantity of colostrum (colostrum is the best “drug” one can use), low-stress weaning and preimmunization of calves up to two weeks before

weaning are practices which reduce the need for treatment.

More direct movement of cattle through satellite and Internet sales is another measure that eliminates lots of commingling and risk of disease spread. These practices can definitely reduce the cost and usage of antimicrobials. In some ways I know it is easier said than done, but the potential for reduction in antimicrobial usage is great.

The pharmaceutical companies are focusing more on vaccinology so you will see broader coverage vaccines for viruses and bacteria. Intranasal vaccines can provide quicker coverage and technology has and will improve the degree of immunity and length of coverage over time. The future will most likely see more vaccines replacing the antimicrobials. It is far better to prevent by management and vaccination than treat with antibiotics.

Also pay attention to parasite treatments. Reducing parasite pressure in your herd will also stimulate the cattle's own natural immune system. That, along with proper nutrition helps to minimize sickness.

With increased usage of antibiotics there is increased risk of selecting for resistance in that species. The oversight of veterinary communities will focus on four things — prevention, production, control and therapy. Another website has been built by the Alberta Veterinary Medical Association (ABVMA) found at: www.raisedwithcare.ca.

This very interactive website offers some quizzes to test your knowledge. The questions you

get wrong become an educating experience.

I encourage everyone to check out these reference sources and inform the public. As we all work together in the cattle industry to do the right thing we can be leaders and educators in helping with the global battle against AMR.

Generally speaking we are already doing a good job but there is always room for improvement. Question your veterinarian and yourself if there is a better way the next time antimicrobial usage seems too frequent on your operation.

Responsible antibiotic usage is not about residues. We already do a fantastic job at that. It is about using the right drug for the right bug and for the right length of time. Take pride in the fact the cattle industry, in many ways, is taking the lead. The medical profession can learn a lot from what you do. Tell your story.

Many times painkillers, supplements, vitamins or minerals rather than antimicrobials may be the therapy of choice. Prevention of the disease through vaccination, low-stress weaning and reduced commingling of cattle can also greatly reduce the usage of antimicrobials. In specific instances we may be able to actually lower drug costs and have better outcomes while at the same time not contributing to any resistance. There will be lots more ahead on this topic in the future, so stay tuned. GN

Roy Lewis is an Alberta-based veterinarian specializing in large-animal practice. He is also a part-time technical services vet for Merck Animal Health.

THE MARKETS

Producers urged to sell earlier this fall

Market expected to go lower heading into the fourth quarter of 2017



MARKET UPDATE Jerry Klassen

Alberta packers were buying fed cattle in the range of \$159 to \$163 in late June, down from highs during the first week of May of \$197. The market has come under pressure as market supplies build on both sides of the border and carcass weights increase.

U.S. cattle-on-feed numbers reached a historical high on June; placements have sharply exceeded year-ago levels over the past three months. Large feedlot inventories have confirmed that beef production will reach burdensome levels in the third quarter.

Wholesale beef prices have also dropped from the May highs with the larger beef production coming on stream. Beef demand has been bolstered by a strong overall economy. Robust consumer spending has enhanced beef consumption.

Feedlot inventories are at 10-year highs. Earlier in spring, carcass weights were declining. The live cattle futures were trading at sharp discount to the cash, causing feedlots to be extremely aggressive on marketings. This caused beef production to come in lower than anticipated in the second quarter. We've now seen the tide turn. Marketing weights are increasing but one positive aspect is that feeding margins remain favourable. Despite the lower prices, producers continue to be aggressive on sales and feedlots remain current with production.

CANADIAN NUMBERS

Cattle on feed in Alberta and Saskatchewan as of June 1 were 881,445 head, up five per cent from June 1 of 2016. Placements during May were 121,548 head, up a whopping 165 per cent from last year. Most of the placements were under 800 pounds so the bulk of these placements will come on the market in the fourth quarter.

Looking forward, the surge in U.S.

third-quarter beef production will have two major implications for the Canadian market. First, exports to the U.S. of slaughter steers and heifers will drop to a trickle. Secondly, exports of wholesale beef will also slow down. This means that additional beef supplies will have to be absorbed in the Canadian domestic market or priced into other offshore destinations. Alberta fed cattle basis levels will likely deteriorate in the latter half of 2017. I'm somewhat bearish on the fed cattle market into the third and fourth quarters. The price outlook is shaping up to be similar to 2015.

Western Canadian feedlot margins have ranged from \$200 to \$300 per head in June. Feedlot operators bid up the price of feeder cattle until margins are at break-even and it now looks like margins in the fourth quarter will drop into negative territory. Feeder cattle prices are expected to trade sideways through the summer and fall. However, the market will likely trend lower in November and December. Cow-

U.S. QUARTERLY BEEF PRODUCTION (MILLION POUNDS)

Quarter	2013	2014	2015	2016	Est. 2017	Est. 2018
1	6,172	5,868	5,664	5,935	6,300	6,545
2	6,517	6,183	5,857	6,187	6,355	6,700
3	6,608	6,179	6,068	6,468	6,770	7,005
4	6,420	6,021	6,109	6,623	6,800	6,860
Total	25,717	24,251	23,698	25,213	26,225	26,500

calf producers will want to be aggressive with their fall marketings. Sell earlier rather than later.

Western Canadian barley prices are expected to strengthen by \$30/mt to \$40/mt next winter, which will add about \$50 to \$60 per head of input costs. Feedlots will calculate their feeder purchase accordingly.

We've seen a very unique market structure in the first half of 2017. Basis levels for fed and feeder cattle have been abnormally strong for an extended period. This will not continue because feedlot inventories are too high. Readers who recall my arti-

cles from last winter know that producers want to sell a strong basis. I want to remind producers that weekly updates on the feeder cattle market can be found every Tuesday on the agcanada.com website. I enjoy the feedback and phone calls, but visiting the website may be helpful for short term marketing decisions. **GN**

Jerry Klassen manages the Canadian office of Swiss-based grain trader GAP SA Grains and Products Ltd., Jerry consults with feedlots on risk management and writes a weekly cattle market commentary. He can be reached at 204 504 8339.

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DAIRY CORNER

Know your lactating dairy diet costs

Look to find a balance between very expensive and very cheap rations

By Peter Vitti

Occasionally, I talk to dairy producers about the financial aspects of operating a barn, aside from dairy nutrition. All producers wish to reduce their lactating feed costs. One producer I know wants to switch to a notorious cheap protein supplement, while another wants to hire a private dairy consultant and tender out all dairy feed purchases. Still another producer wants to buy a dairy micro-premix and build his lactating cow diet from the ground up. In all three cases, each producer did not know a detailed account of their current lactation dairy diet costs.

Knowing the average total daily feed cost is not by itself particularly helpful in reducing feed costs. Rather, it's more valuable to have a detailed spreadsheet listing each feed ingredient – forages, grains, protein feeds, added fats, mineral/vitamin premixes and feed additives – and to how much each is fed to a lactating cow and what each ingredient costs, summarized to a bottom line.

KNOW YOUR COSTS

By calculating daily feed costs for lactating dairy cows in this way, the

dairy producer receives immediate payback as such:

1. The initial spreadsheet is a starting reference from which future diet costs can be derived and compared.
2. The cost of similar feed ingredients (re: different forages) can be compared.
3. Market cost changes of feed ingredients can be updated at any moment.
4. Formula and relevant feed costs can be updated, so respective costs to feed a lactating cow can be estimated.
5. The value of specific feed ingredients can be justified, added, increased, decreased or deleted.
6. Movement to another feeding regime can financially be examined.

Besides, setting up a feed cost spreadsheet is simple!

Within 20 minutes, I pencilled out the cost of three lactation feeding regimes: 1. Protein supplement, 2. Dairy premix and 3. Dairy micro premix for dairy diets, all based on a lactating dairy herd of 160 DIM, 39 kg milk production, four per cent milkfat and 3.3 per cent protein. Note: the cost of each ingredient was based upon western Canadian regional feed prices.

The first thing I see is the bottom

line of each feeding regime – \$6.80 to \$7.65 per lactating cow, daily. From this point, I can make my first assessments of these three different diets.

REAL FARM EXPERIENCE

This exercise parallels my own experience. I know a producer (operates a 200-cow dairy) who wanted to get away from his present dairy (macro) premix and move toward a micro premix in order to save on feed costs. Since I am familiar with his facilities (age of mill, number of bins and other storage space), I advised against this move based his own similar spreadsheet savings of about \$0.14 per lactating head daily or a monthly feed savings of about \$840.

Next, I can make more in-depth observations concerning the use of specific feed ingredients. For instance, the value of using palm fat and/or feed additives such as adding direct-fed microbials (DFMs).

In the above case, the cost of adding palm fat constitutes about 15 per cent of this total dairy diet's cost.

I recommend dairy producers in their own situations to give adding palm fat a second thought depending on where their current butterfat per cent stands. If their milkfat

LACTATING DAIRY DIET COSTS

Ingredients	\$ /tonne	Diet 1	\$	Diet 2	\$	Diet 3	\$
corn silage	\$ 47	23	1.08	23	1.08	23	1.08
alfalfa hay	\$ 190	5	0.95	5	0.95	5	0.95
grain	\$ 200	7	1.40	7	1.40	7	1.40
protein supp	\$ 700	3.5	2.45	0	0.00	0	0.00
distiller's grains	\$ 200	0	0.00	1.5	0.30	1.5	0.30
soybean meal	\$ 530	0	0.00	2	1.06	2	1.06
dairy premix	\$ 1,400	0	0.00	0.25	0.35	0	0.00
dical phosphate	\$ 980	0	0.00	0	0.00	0.12	0.12
limestone	\$ 150	0	0.00	0	0.00	0.1	0.02
dairy micro premix	\$ 4,000	0	0.00	0	0.00	0.028	0.11
vegetable oil	\$ 1,000	0.3	0.30	0.3	0.30	0.3	0.30
palm fat	\$ 2,150	0.45	0.97	0.45	0.97	0.45	0.97
feed additives		0.01	0.50	0.01	0.50	0.01	0.50
water	\$ -	5	0.00	5	0.00	5	0.00
		44.26	\$ 7.65	44.51	\$ 6.91	44.508	\$ 6.80

yield is already over 4.0-4.2 per cent without adding palm fat, then adding any palm fat might be an unnecessary increase in feed costs due to the "law of diminishing returns." Similarly, I budget 50 cents for formulating feed additives into the diet of high producing dairy cows, only on the con- signment that they produce tangible results such as adding yeast to the lactation diet to help combat heat stress.

No dairy producer should compromise good milk production/milkfat yield in favour of solely

reducing feed costs. I believe that dairy producers should use any feed ingredient that contributes to optimum milk production, but also realize that there are limits to the financial reward of any feed ingredient. Common sense must prevail that neither the most expensive nor the cheapest ration for high-producing dairy cows is likely the most profitable. **GN**

Peter Vitti is an independent livestock nutritionist and consultant based in Winnipeg. To reach him call 204-254-7497 or by email at vitti@mts.net.

ANYONE CAN START FARMING

Be prepared for accidents

Prevention measures and first aid kits are important



Debbie Chikousky

Pasture season is supposed to be peaceful. The busy time of baby season is over; the extra chores of winter season are over. Ideally it is time to make hay and sit on a rise and watch our livestock just be. The mature animals have the opportunity to rebuild their stores of nutrients from the lush green pastures while the young stock runs and plays. Life is good until someone gets hurt.

The summer is the time when livestock and farmers alike seem to get cut, get stung or bit by insects, or just walk into things more often. So it is a good time to remember to take care and have supplies on hand.

A summer/fall job for Mom has been collecting first aid for livestock information and supplies putting them all in one spot. With two generations of us farming together now, having data in a common area is important for things to run smoothly. Since our farm employs livestock guardian dogs and herding dogs, they are

included. Also, vets find this information very useful when they are called.

Average body temperatures of livestock (F)

Cattle: 101.5
Sheep: 102.3
Swine: 102.5
Goats: 103.8
Horses: 100.0
Rabbits: 102.5
Chickens: 107.0
Dogs: 100-102

Respiration (breaths per minute)

Cattle: 10 to 30
Sheep: 12 to 20
Swine: 8 to 18
Goats: 12 to 20
Horses: 8 to 16
Rabbits: 50 to 60
Chickens: 15 to 30
Dogs: 15-30 (not panting)

Pulse Rates

(Beats per minute – usually easily located on their necks)
Cattle: 40 to 70
Sheep: 60 to 90
Swine: 60 to 100
Goats: 60 to 90
Horses: 28 to 40
Rabbits: 140 to 150
Chickens: 200 to 400

BASICS OF FIRST AID KITS

Without baby season supplies in the barn for emergencies, it is prudent to make sure the first aid supplies are up to date for both humans and livestock. Maintaining the kit supplies means a date must be picked to make sure they are organized. The easiest date for our family to remember is hydro meter reading day. A recipe card for the checker to initial could be used if necessary. This is a list of the very basic first aid supplies for humans and livestock. There are lots more items that are kept in the house such as meds that need refrigerating and emergency phone numbers. (A phone list is important especially in areas like ours with no cell service).

Human supplies (barn/tractor)

Bandaids
Diaper wipes
Gauze
Antibiotic ointment
Safety scissors
Tweezer
Safety pins
Tensor bandage
Flashlight
Eye patch
Activated charcoal
Sanitary napkin for severe cuts
Pocket first aid book/app

Livestock supplies

Rectal thermometer
Iodine/betadine
Bloat-Eze
Latex gloves
Safety scissors
Vet wrap
Syringes
Flashlight
Petroleum jelly
Hoof trimmers
Quick Stop (stops bleeding on hooves)
Clean rags for cuts and bandaging
Activated charcoal

For those with smartphones there is a free app available through the Canadian Red Cross. A printable PDF first aid manual can be downloaded at www.firstaid-cpr.net. St. Johns Ambulance has a booklet that can be ordered online or picked up at a local branch. The cost is \$1.50 plus applicable taxes/shipping.

ACCIDENT PREVENTION MEASURES

Along with preparing for accidents we are also trying to prevent them from happening in the first place. One of the most common hazards causing livestock injury is barbed wire. We are slowly moving ourselves over to smooth wire electric fencing. Last summer we had quite the fight because a bear kept scaring animals out of one of our pastures. Luckily neither livestock nor humans got hurt but fence repair was very time consuming.

This pasture now has a low impedance solar power fencer and it is working very well. The calves are held in areas with a high output fencer from the time they are born. By pasture time, respecting the electric fence really is a mental more than a physical barrier.

Wolves are in our area along with bears but the fence energizer company says they are actually easier to keep out with electric fence than other animals due to their size and grounding capability. So far, two months in, the electric wire is doing its job.

This change in itself is saving us the work of fixing and fencing and allowing more time to get other work done. The added bonus to solar power is when hydro goes out the fence remains active. Plus it isn't drawing on the hydro bill.

I'm hoping my much smarter son will figure out how long it takes to recover the \$260 fencer cost. Then we will feel very accomplished.

Summer is a time to be busy and enjoy our farms and families. Farming is busy and accidents happen so being prepared just makes sense. Here's wishing everyone a fantastic summer of productivity. **GN**

Debbie Chikousky farms with her family at Narcisse, Manitoba. Visitors are always welcome. Contact Debbie at debbie@chikouskyfarms.com or call 204-202-3781.

BETTER BUNKS AND PASTURE

Feedlot Holsteins need powerful feeding programs

With proper ration and management, dairy steers make good beef



Peter Vitti

As I travel across Western Canada, I see more beef producers raising Holstein steers in their feedlots.

Years ago, I didn't think of Holstein steers as potentially profitable cattle, because I had a lot of misguided prejudices. However, my attitude did a complete "180" turnaround when I started working with a few successful Holstein producers by helping them put together special feeding programs for dairy steers. I saw how well Holstein steers can perform if they are recognized as a different class of feedlot cattle compared to traditional beef breeds. Now I advocate that Holstein steers can draw good revenue.

The biggest difference that I and many experienced Holstein-beef producers and myself have recognized is that these steers are large

animals that eat a lot of feed. That's because they need about 10-15 per cent more daily dietary energy compared to beef breeds. Due to greater frame size and larger internal organs, a Holstein steer's dry matter intake for feed is about 10-15 per cent greater as well.

Using this fact as a focal point, I can establish a list of measurable performance expectations for Holstein steers, when they enter, are fed and finished in commercial feedlots.

It is clear to me that Holstein steers have a unique set of performance characteristics. First, they have slightly lower ADGs due to larger maintenance requirements. Second, they are less feed efficient also due to higher maintenance requirements. Also they become less efficient over time in the feedlot, since Holstein cattle naturally lay down less lean body tissue and fat as they gain weight. Lastly, also due to their large skeleton and vital organs, their dressing percentage is lower than your typical beef feedlot breeds.

Yet by working with these constraints, we can yield a saleable carcass that is actually larger than one of a typical beef breed. Several studies have also demonstrated that most Holstein steers finish with enough backfat cover to grade desirable AAA or AA. It has been my experience that such Holstein yield and grading success is actually based upon how well these feedlot steers are fed and managed in three ways:

(1) Put them on a higher-energy plane of nutrition compared to conventional beef cattle,

(2) Use their larger DMI to your advantage and feed for total ADG performance, not for traditional beef breed frame size and

(3) Set up strategic use of hormone implants to reduce the number of days Holstein steers spend in the feedlot.

Here is an illustration of sample diets of a grower and finisher diets for Holstein steers marketed at 1,500 lbs.; coming into the feedlot as 500-lb. calves and gaining an average of

2.5-3 lbs./head/day on the grower diet and an average of 3-3.6 lbs./head/day on the finisher diet:

For the past six years, I have implemented this energy-enriched two-phase feeding system at a few feedlots in Western Canada. For example, one particular feedlot raises about 700 Holstein steers, the cattle have consistent gains and typically grade about 95 per cent AAA/AA with a few Prime animals in the shipments.

Carcass yield has grown over the last few years from 55 to present 58.5 per cent. A few years ago, we did have a slight problem with subclinical acidosis and laminitis during hot weather, especially when heavy cattle reached over 1,000 lbs. However, the feedlot manager and I solved this problem by adding extra limestone and a probiotic yeast to the feedlot TMR diet.

In another consulting 300-head feedlot case, I found out that there was a number of Holstein steers "riding" each other, while an unac-

ceptable number of shipped steers was grading as B1 or "dark-cutters." These two problems are related and by working with the feedlot's veterinarian, we altered the implant program, which solved both problems at the same time. As a result, most cattle on this operation graded AAA or AA at market.

These two Holstein feedlots are success stories, because both operators feed Holstein steers properly. It's a matter of providing nutritious diets that are specifically geared for meeting the higher energy requirements of the growing and finishing Holstein steers.

In contrast, I know one dairy producer that raises about 100 Holsteins on traditional beef breed diets, and he has Holstein steers approaching their second birthday! **GN**

Peter Vitti is an independent livestock nutritionist and consultant based in Winnipeg. To reach him call 204-254-7497 or by email at vitti@mts.net.

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SPACE & MATERIAL DEADLINE:

Friday, September 15th

RANCHER DIARY



Granddaughter Heather and her husband Gregory are proud parents of new arrival Joseph Michael Eppich.

PHOTO: HEATHER SMITH THOMAS

Some heifers are slow to “mother”

Along with all the daily ranching chores, a great-grandson enters the picture



Heather Smith Thomas

MAY 2

A week ago, LillyAnn calved. That left Gemini Cricket all by herself in the maternity pen. Andrea got #47 (Sugar Bear, the dry cow that lost her premature calf in February) in from the field to put with Gemini Cricket — the last heifer

— so she wouldn't go nuts all by herself.

It was raining so we put LillyAnn in the barn to calve. She had a big red bull calf. He was slow to get up, however, and only nursed one teat a little bit. By the time he was 12 hours old he was nursing better, but weak and wobbly. He had diarrhea by noon the next day when we put the pair out of the barn. We gave him an oral antibiotic. This was an example of how important it is for

calves to receive an adequate amount of colostrum within the first two or three hours of birth, to get the necessary antibodies against scour “bugs.” He was sick and off feed through the rest of that day but the medication turned things around. By 5 a.m. the next morning he was doing much better.

Later that evening Carolyn called to tell us that young Heather was having her baby; Gregory had taken her to the hospital. Lynn and

I stayed up and waited for news of the birth, and I fed our calf another bottle at 1:30 a.m. Heather had her baby shortly after. They named him Joseph Michael Eppich. He weighed eight pounds, 11 ounces, and has lots of hair. The Monkey (Gregory's nickname for the unborn baby) has arrived!

MAY 26

Carolyn's mare, Thelma, foaled Sunday at 11 p.m. Carolyn heard her whinny and ran out to the pen. The foal wasn't progressing; Carolyn had to straighten one leg and then it was born quickly — a nice colt.

It rained for several days. We had four inches of new snow Wednesday morning — on Lynn's birthday — and very cold. I plugged in the tractor that morning so it would start later to take a bale to the heifers. It barely started, however. In the meantime, the heifers went through the hot wire out into hayfield, which meant the electricity in the barn wasn't working. Rain leaking through the barn roof shorted out a light socket and blew a fuse.

JUNE 22

A couple of weeks ago Charlie helped Robbie rebuild part of the falling-down crossfence in the swamp pasture. They put up several sections of jackfence. We'll rebuild the rest of that fence this fall when it's not a swamp from irrigation water.

I put front shoes on Dottie and shod Ed so Dani can ride her. Michael shod Sprout, put hind shoes on Dottie, and trimmed Shiloh's feet.

Andrea and I made several rides on Sprout and Dottie to start getting them back in shape, and on one ride met Alfonso taking salt to the middle range. We offered to help move his and Miller's cows. He was glad to have some help because the Amish were too busy to ride until the end of that week and the cows needed to be moved quicker. During the next few days, Andrea and I rode a couple times and moved several bunches. When the kids got home from a week with their dad, the girls helped us move the rest of the cattle.

With the range cows moved, we could put our cows on the little hill pasture above our house — adjacent to the low range — without having to worry about range bulls trying to come through the fence. After we put our cows on the hill pasture, it rained for several days — nice cool weather for the cattle.

This week it's hot and dry, so we turned off some irrigation water so we can dry up our hayfields and start cutting hay in a few days. GN

Heather Smith Thomas is a longtime Grainews columnist who ranches with her husband Lynn near Salmon, Idaho. Contact her at 208-756-2841.

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SEEDS OF ENCOURAGEMENT

Positive seeds to plant in July

This summer plant seeds of ideas that you can bounce off the other generations



Elaine Froese
www.elainefroese.com

We won't have carrots on our farm this summer because I procrastinated in weeding out the redroot pigweed and a "helpful" friend hoed the row before I knew it. "Weeds are any plant that are not in the right place," according to the certified seed grower who I live with.

Procrastination is not only a killer in the garden, it is also crushing the dreams of hundreds of young farmers whom I meet. It happened again this morning. The email says: "Elaine we reached out to you last year, and now we wish we would have acted sooner..." Then the parents confess that they have been putting things off, and the tension on the farm has reached a boiling point.

So this summer when you are fishing, skiing, roasting marshmallows around a cosy fire, plant some seeds of ideas that you can bounce off the other generations of your farm team. Have some fun celebrating the rituals of summer, and use the downtime to explore the needs and desires of the rest of your family. When you can have some rest your brain will allow some new ideas to percolate and take root.

"Elaine, we have no time to roast marshmallows!" Seriously?

Then you have other issues, like workaholic or labour shortages on your farm. "What does it profit a man if he gains the whole world but loses his soul?" shouts the field sign near Crystal City, Manitoba. At the end of this time on earth you cannot take your tractor with you! How about the richness of relationships, and the legacy of love you create now while you also manage a "rock 'n roll" great farm business?

Sow these succession seeds:

1. Housing

Talk about where you want to live and why. Our plan has now changed. We bought a lake home to use as a family retreat. We are staying in our farm home for likely the next 20 years. Our



Don't forget to take some fun downtime this summer. Rest will allow your brain to have some new ideas.

successors are likely building a home close by in three years. Yes, this breaks my "half-mile rule" to live farther away, but like you, my plans can change. Be flexible.

2. Viability

How many families can your farm support at a decent level of income (not slave wages)? As you sit around the fire, start being transparent with the farm financial information with the next generation.

3. Vision

Dreams become reality when they are goals with a timeline. Share your dreams and vision with your loved ones. I had always dreamed of having a waterfront property that we could share with family and friends, and a place to encourage women.

When the dream became a reality I could hardly sleep because I was so excited to see all the possibility in the new space. Your vision should be workable as a couple. Don't reject thinking about the future for fear of getting older. We are all aging!

4. Share your 'Why'

What is your intent for your life, your farm, your family? It is my intent to keep working as a farm family coach for the next 10 years, and speak to groups in my 70s. We'll see how that all unfolds now that I am a grandma! When you say, "It is my intent to explore new ways for us to farm," then people can grasp where you are going. Recently the light bulb of insight lit up for a farming dad who realized that he was thinking of ways to protect his family in his head, but

he forgot to use words to explain his intent. The family read his behaviour as "controlling" when in reality the dad was just trying to be helpful. Sharing intent is a huge part of being constructive in conflict resolution. Stop trying to read minds; share your intent instead!

5. Share stories

As a coach it helps my families to understand that they are not the only ones going through angst and tension about transitions on the farm. It helps us all to know that others have gone through tough decisions and come out stronger on the other side. Tell stories on the fishing boat. Let your family know what life was like for you at their age. Honour the legacy passed down to you by your ancestors. Storytelling is a powerful

way to get to know the emotional factors affecting your planning. Make sure you tell "healing stories," not only sad ones.

6. Reach out as a good listener

Reaching out to another is a good way to constructively resolve problems. Listen actively and respond carefully to concerns. You want to move the conversations forward, so be curious. Say, "I am just curious..." and then ask for what you really want to find out. You can also start it up softly with, "I have been thinking..." statements.

7. Ask more powerful questions

Author Marilee Adams who wrote *Change your questions, change your life* says we should question everything. This might get annoying, so ask, "What do you want...?" or, "What if?" types of questions. I like to track my ideas in a notebook. On nights when sleep eludes you, do a brain dump on paper and see if the questions have answers in the morning.

8. Explore your money scripts

It has been a delight to have folks say, "I am so happy for you," when I share news of the lake house. Some folks of course will be jealous, silently wishing they could have the same resources to buy a cabin, boat, etc. What does money mean to you? I have been to four funerals in the last six weeks, which is a great reminder that wealth is not in "stuff" but in your health and your relationships.

I suspect some farm families with older "traditionalists" folks born before 1945 are suffering with money scripts that don't work well together. The 70-year-old dad who refuses to sell outdated equipment is frustrating the 45-year-old successor and 20-year-old grandchild who have new plans for assets to shift. Are you able to "let go?" **GN**

Send carrots! (Just kidding!)

Elaine Froese empowers farm families to take action on tough transition issues. Don't call her until September. Visit [@elainefroese](http://www.elainefroese.com). FB "like Farm Family Coach."

If it weren't for the messages from some of the leaders I connected with, I wouldn't have this clear vision nor the motivation to go after it. I can't thank you enough for that. — Jen C., Ontario, AWC Delegate

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CANADIAN CHERRIES



Developing the cherry industry in Western Canada

Saskatchewan couple's venture into growing cherries turns into establishment of on-farm processing plant

By Edna Manning

When Bruce and Charlene Hill planted 80 sour cherry shrubs on their farmyard near Imperial, Sask. in 2005, they had no idea their venture would result in the establishment of a processing plant on their farm, as well as initiate a nationwide cherry industry.

Bruce had been involved in agriculture most of his life but wanted to relax and plant some flowering fruit plants to enjoy every spring.

The cold-hardy "Carmine Jewel" variety of sour cherry was developed by the University of Saskatchewan and released by the Fruit Breeding and Research Program in 1999. "The colour, sweetness and intense flavour is significantly different, and better than other cherries," Hill says.

In 2007 the "Romance" series with similar parentage was released. All the dwarf cherry cultivars grow between six to eight feet, which allows for over-the-row mechanical harvesters.

The Hills initially wanted to plant saskatoons, but soon realized that being native, they were prone to pests and diseases. "I wasn't anxious to get back into pesticides and herbicides, so we switched to cherries," Hill says.

During the spring of 2007 the Hills had cultivated 20 acres of their pasture land and planted about 5,000 cherry shrubs. A trickle irrigation system pumping water from nearby Bulrush Lake helped to get the plants established, and an eight-foot deer exclusion fence was built.

In the fall of that year, Hill and 40 other cherry growers formed Canadian Cherry Producers Inc. (CCPI), a non-profit corporation, with Hill as president. The purpose of CCPI is "to promote the industry, educate consumers and producers and encourage research." Hill served as president for nine years and Charlene currently continues as a director. Bruce was also a director of the Saskatchewan Fruit Growers' Association and has served nationally with the Canadian Horticulture Council.

In 2011, the Hills began development of a processing plant on the farm to sort, rinse, pit and freeze cherries. "Our primary product is dehydrated cherries. We use no additives like oil, sugar or red dye."

In 2016, the Hills developed a "cherry jelly" with reduced added sugar. "At Hill Berry Acres, we believe strongly in working with nature to produce a safe healthy food for consumers," Hill says.

The Hills recently tried honeybees

hoping to increase pollination of cherry flowers. "The first year we extracted some 1,600 pounds of honey. But work with the Royal Saskatchewan Museum (RSM) led us to believe honeybees are more attracted to nearby canola fields and dandelions than our cherry blossoms. Work with Dr. Cory Sheffield of RSM and his students is ongoing.

"Cory's work is definitely shedding some light on pollination. We have refocused several times and believe that Mother Nature plays a major role we need to support," Hill said.

One of the Hills' biggest challenges is gaining knowledge of the needs of consumers. "Saskatchewan is a huge province with a low density of people. The benefit of having orchards far apart, (disease and pest reduction) is offset by great distances for markets. Canada's food regulations assure consumers of safe food but are a huge hurdle for small producers. Saskatchewan's marketplace is still underdeveloped."

For more information go to www.hillberryacres.com or the Canadian Cherry Producers, Inc. www.cherryproducers.ca. GN

Edna Manning writes from Saskatoon, Saskatchewan.



PHOTOS: COURTESY BRUCE HILL

In the fall of that year, Hill and 40 other cherry growers formed Canadian Cherry Producers Inc. (CCPI), a non-profit corporation, with Bruce Hill as president.

PRAIRIE PALATE

Spudnuts — specialty of the Saskatoon summer fair

These potato doughnuts are light and fluffy and a delicious way to eat mashed potatoes



Amy Jo Ehman

Today, I would like to tell you about the time I kept a New Year's resolution all the way into August. Yes, eight months. No fails.

As you might guess, this resolution had nothing to do with exercise, weight loss or budgeting, all of which have a low success rate beyond February 1. No, this is about the year I pledged — from the bottom of my heart and my stomach — to eat more spuds.

Why the potato, you ask? What better vegetable to celebrate in the depths of a Prairie winter than the hardy, tenacious tuber sitting stoically in the cold room, eager to sprout forth at the first joyous rays of spring.

As a garden vegetable, the potato thrives in our northern climate; perhaps if I ate more potatoes, I reasoned, some of that northern vigour would rub off on me. Also, the potato is the only vegetable for which my province (and my family) is pretty much self-sufficient, which is reason enough to eat more. Finally, though

born in the high mountains of Peru, the potato has successfully travelled the world, inspiring a cornucopia of world recipes from curry aloo to vichyssoise. Since I am not a fan of plain old (boring) mashed potatoes, I would rely greatly on this culinary versatility like an armchair traveller whose armchair has been pulled up to the dinner table.

To kick off the year of the potato, I devised a menu for New Year's Eve with potatoes in every course. The appetizer included blue potato pakoras, a delicious deep-fried snack from India made with grated potato and besan (chickpea flour), along with a Spanish omelette of fingerling potatoes, red peppers and eggs. For the main course, I served roast chicken with a side of tartiflette, a lovely alpine concoction of sliced potatoes, bacon and cheese. For dessert, I made mashed potato chocolate chip cookies, then we toasted the new year with a bracing shot of potato vodka. I went to bed confident it was a New Year's resolution that would stick — at least to my ribs.

Then came August. And with August came spudnuts. As the name implies, spudnuts are doughnuts made with potatoes as a main ingredient. They are a spe-

cialty of the Saskatoon summer fair, held every August, having been introduced decades ago by members of the Church of Jesus Christ of Latter Day Saints who sold spudnuts as a fundraiser. The local love of spudnuts has since outgrown the capacity of church volunteers. Nowadays, exhibition park employees handle the job, making 45 batches of 200 spudnuts every day of the fair. That's a lot of potatoes.

Originally made with mashed potatoes, modern spudnuts can also be made with potato flour, instant mashed potatoes and even pre-packaged mixes. The potato makes a doughnut that is lighter and fluffier than those made with flour alone. But I like this old-fashioned version, which is undoubtedly my favourite way to eat mashed potatoes.

As August rolled into September, fortified with spudnuts and a fresh harvest of spuds, I had no problem sticking to my New Year's resolution to the very last day of the year. At which time I made a new resolution to eat more beans. **GN**

Amy Jo Ehman is the author of Prairie Feast: A Writer's Journey Home for Dinner, and, Out of Old Saskatchewan Kitchens. She hails from Craik, Saskatchewan.

SPUDNUTS



PHOTO: AMY JO EHMAN

1 packet yeast (2-1/4 tsp.)
1/4 c. warm potato
cooking water
1 c. mashed potatoes
3/4 c. warm milk
1/4 c. melted butter
or vegetable oil

1/4 c. sugar
1 egg, lightly beaten
1/2 tsp. salt
3 to 4 c. all-purpose flour
Vegetable oil or lard
for deep frying

Dissolve yeast in warm potato water and let sit until frothy, about 10 minutes. Stir in mashed potatoes, warm milk, butter or oil, sugar, egg and salt. Add 3 cups flour and knead 8 to 10 minutes, adding the remaining flour as needed to form a smooth dough that is not sticky. Place in an oiled bowl, turning the dough to oil all sides, cover with a tea towel and let rise until double in size, about 1 hour. Punch down and rise again until doubled. Roll dough to a thickness of 1/2 inch. Cut with a doughnut punch. Alternatively, you can cut the dough into circles (with a cookie cutter or a glass) and work a hole in the centre with your fingers. Let spudnuts sit and rise for 15 minutes. Heat vegetable oil or lard at a depth of 2 inches to 360 F. Working in batches, fry spudnuts until golden brown, turning to cook both sides. Place cooked spudnuts on paper towel to drain. Sprinkle with sugar or glaze with vanilla icing.

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SINGING GARDENER

Info on edible wild mushrooms

Word of caution — never eat any that have not been properly identified



Ted Meseyton
singinggardener@mts.net

Had an informative and enjoyable visit with Bagot, Manitoba-area resident Ed Brecknell in mid-May of this year where I learned about distinctive and edible morel mushroom (*Morchella elata*) and edible oyster mushroom (*Pleurotus ostreatus*).

Both are wild fungi without chlorophyll and grow randomly on his farm property. There are also oyster mushroom look-alikes and poisonous oyster mushrooms. It takes a trained eye to recognize the differences. Right off the bat — this important word of caution. Never eat any wild fungi that have not been properly identified by a qualified person or professional. Inexperienced persons should never gather them for food as some are deadly when ingested. Take for example the amanita mushroom, sometimes called the “destroying angel.” It can cause death in less than six hours and as far as is known, there is no antidote. Wild mushrooms are such a distinct and unique part of nature. As a result, today’s column is devoted to that subject and even then I’m only skimming the surface. Before I dig deeper, here’s a tip of my hat and a great big Prairie welcome to all *Grainews* readers wherever you be across this vast land.



TAUGHT BY HIS DAD

Ed Brecknell is well informed about both non-poisonous and poisonous types of fungi and attributes his knowledge of the subject to his dad who was from Pelly, in southeastern Saskatchewan. Ed explained it this way. “Dad told me of how his father would go for a walk and bring back a pailful of mushrooms of different types. Later, my dad started picking them now and then. It’s just in the last few years that I began picking them in my own area.”

Ed continued, “This is probably the best I’ve ever seen for morels. They’re growing along cow paths and in dark, shaded and wooded areas where there’s lots of soft humus-like soil that’s moist but not wet. They’re a dark-charcoal colour when popping up through the grass and just about everywhere the middle of May. The season lasts only a few weeks. Morels usually come one at a time. However, when I’d poke around here and there, sometimes I’d find three and four in a cluster. This has been a really good year for them.”



Ed Brecknell holds a foursome of freshly picked wild morel mushrooms harvested on his property. Their distinct taste is difficult to describe, but proclaimed by many as unsurpassed. They may be prepared either battered or pan-fried, and as a key ingredient in a cream sauce poured over peas and carrots, broccoli or pasta.

Ed provided me with a brief resumé attributed to his dad. “My father Dale Brecknell would have made a nice story. He passed away three years ago at 91. He went from riding horses on the farm during the Depression to riding a motorcycle on the front line as part of the Italian invasion during the Second World War. Then, he became a foreman on complicated construction jobs with only a Grade 10 education as well as farming from 1962 ’til the early 2000s at Bagot. I was smart enough to get his life history told to me on camera from about 1927 until the 1970s.”

PREPARATION AND SERVING MORELS

Here’s Ed’s method. “There’s usually some dirt at the bottom part after I break or cut off the top section. The morel root system is left undisturbed. I rinse the morel real quick to get rid of any sand, or brush off any dirt or whatever with a pastry brush, then shake or pat dry to get rid of any moisture, then slice it in half. Morels are hollow. My method is put some butter in a pan and fry them up. They become very soft. You can eat them that way, or, you can cook ’em a little longer to get rid of more moisture and they become a little firmer. I also freeze prepared morels in sandwich bags and have those for future eating.

Morels are an acquired taste — more earthy. This year I think I’ll dehydrate some in the dryer and use them for soups and stews. I have no fear of morels and know exactly what they are.”

Ed told me a lot of people are reluctant to eat morels and have said if he eats them first, they’ll try some, but most people still don’t. “They’re afraid of them which is good,” and Ed’s OK with that and points out, “once a person learns about morels, what they are, how to pick and identify them, they then become more comfortable with morels. I see other wild mushrooms but won’t eat any unless I absolutely know for certain they’re edible.”

OYSTER MUSHROOMS

Ed tells me these don’t grow on the ground and usually appear a few weeks after morels. “They generally grow mostly on the north side of dead tree wood, sometimes waist or shoulder high. I once harvested an oyster mushroom that was about 12 feet up, knocked it off with a stick and caught it as it fell. Oyster mushrooms can also grow on a log that’s lying on the ground or on some decaying bark.” According to Ed, “I’ve seen some oyster mushrooms the size of a man’s fist or half the size of a hubcap. I just get a knife or whatever and slice it away from the tree.” Ed retrieved several of them last year and says,

“They can be quite heavy. They’re kind of rare. An oyster mushroom is whiter when it first comes out and darkens as it ages. In my case, I own all the land on which I’m picking mushrooms. I know where to find them and what they look like and those that are edible.”

I, Ted, extend my thanks to Ed Brecknell for the visit and in-depth introduction to wild mushrooms growing at his premises. Later he sent me an email. “When it comes to foraging for oyster mushrooms and morels, one never knows how the harvest will be from one year to the other. I have been doing house maintenance, and there is always something to do at the farmland I own, like fencing etc. I try to do a two-mile walk every day in the woods. This year the tent caterpillars are very bad; most trees are completely stripped. Glad to hear you are keeping up the guitar and singing.” GN



This is Ted Meseyton the Singing Gardener and Grow-It Poet from Portage la Prairie, Manitoba.



PHOTO: TED MESEYTON

Fresh morels can fetch upwards of \$50 a pound and many times more when dried. This treat of nature is available from the wild and prized for its honeycomb texture and rich, earthy flavour. Ed Brecknell places his hands around a ready-to-harvest morel mushroom in its growing site to show size comparison.



PHOTO: ED BRECKNELL

Shown are wild oyster mushrooms growing on the side of old weather-beaten tree wood on Ed Brecknell’s farm. They are frequently used in stir-fried dishes. Oyster mushroom caps are thin and added to other foods at the last stage of cooking. Huge specimens as shown can be cut or torn into large pieces, dipped in slightly beaten eggs, and then rolled in bread crumbs for pan-frying. They dehydrate rapidly and when used dry can be added to other prepared food without rehydration. Oyster mushrooms store well in a freezer after briefly sautéing in butter.

i For many wild mushroom hunters, secrecy is paramount. An experienced harvester tells it this way. The entire mushroom should never be pulled out. When that happens the whole ecosystem is destroyed. Secrecy is maintained as every experienced mushroom picker knows how to harvest them so the growing site is maintained and never dies off and there’s always a future return. A well-taught mushroom hunter cuts them off at the bottom of the stem with a knife and leaves the rest undisturbed. The correct procedure is usually passed down one generation to the next. Lobster mushrooms are really rare and can sell for up to \$400 a pound. They grow under moss; are like finding a needle in the haystack and really taste like lobster.



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