Two years ago AGCO introduced the all-new 1000 Series rigid-frame tractor to the world with a big splash, using Bavaria’s spectacular Neuschwanstein Castle as the backdrop for the press event. The brand recently followed up on that European introduction with a more conventional official launch of these machines in North America at the National Farm Machinery Show in Louisville, Kentucky, in February.

Despite starting off in the European market, Rob Smith, a senior AGCO executive, who spoke about the tractor at a press conference during the Agritechnica machinery show in November, said the 1000 Series was designed from the outset with the North American market in mind.

In fact, the tractor was meant to have a broad appeal, which is why its design is so different.

The 1000 Series is certainly no me-too tractor. Its models are the first and only machines in an entirely new tractor category. It looks like a standard front-wheel assist; however, it boldly goes where no rigid-frame, wheeled model has gone before when it comes to horsepower ratings. The four models in the series go from 380 to 500 horsepower. Until now if you wanted a wheeled tractor in that range, an articulated four-wheel drive was the only choice.

This tractor is meant to go head-to-head with four-wheel drives and steal some market share from them.

During that press conference in Germany, the company revealed the development goals behind the 1000 Series concept. First, engineers were striving for a 10 per cent reduction in fuel consumption compared to four-wheel drives. Second, they wanted the overall design to be more flexible and versatile. Lastly, to achieve those goals they wanted the tractors to be capable of a broader range of weight ballasting, so they can be lighter when that is an advantage. And using some of the biggest ag tires available, they still plant a lot of rubber on the ground to make use of up to 500 horsepower.

The tractors use an entirely new drive train design too, which won it a “Tractor of the Year” award in the high horsepower class at Agritechnica. The idea behind it is similar to the all-wheel drive concept in sports cars. Power flows to the wheels that need it most, and only when they need it. Not driving all the wheels all the time is one of the fuel saving strategies built into the tractor. Fendt’s Vario CVT transmission routes power from the engine, but from there things start to look different. A combined mechanical-hydrostatic drive arrangement uses two hydraulic motors, one to spin the front axle and another for the rear.

Drive can be distributed to each one at different rates or stopped altogether. Another benefit of that is it helps limit driveline stress.

Also, a tighter turning circle can be created by routing drive to the front axle and pulling the tractor through a curve.

Base weight on tractors in this series is only 30,000 pounds, but...
It’s over! We’ve survived the dark heart of another Saskatchewan winter. This year, it doesn’t feel like much of an accomplishment, if I’m honest. Here in southeast Saskatchewan, I can’t remember one day when the weather stopped me from driving somewhere I wanted to go. After some pretty cold days in November, I didn’t have high hopes for this winter season, but it’s turned out well. Many parts of the Prairies have had reasonable weather this year, for driving, or just walking around outside. Compared with other years, this has been fantastic. “Fantastic” may not be the word that comes to mind first if you’re one of many farmers across the Prairies worried about spring subsoil moisture. Or if your winter wheat has been left uncovered a little too long. Here at Griffin, Sask., the rec board had to cancel the annual snowmobile poker derby, because there just isn’t enough snow. All kinds of people might not be as happy as I am about this winter weather. In fact, the only reason I’m this positive is that we still have some subsoil moisture left over from our 2011 flood. We can’t decide if we’re more worried about a spring rain deluge like the one that flooded us out four years ago, or a hot dry summer that turns into a drought. I’m calling it a draw and just enjoying the weather.

Leeann

Month of Jan 2016

Prairie Region
Monthly Average Temperature: Jan 1-31, 2016

In case you’ve forgotten, here’s a look back at the January temperatures across the Prairies. You can find maps like this online at weatherfarm.com. Select “weather maps” on the top tab, and you’ll see that it’s easy to set your own variables. Narrow in on your province, or see the temperatures from a different month.

Leeann

What’s with all these papers?

You may have noticed copies of Grainews piling up on your table this past month. Don’t worry, it’s not that your reading speed has slowed. We have been mailing you weekly issues for the past four weeks. We publish 18 copies of Grainews every year. Eight of them come out from January to March, and the other 10 are pretty evenly spaced throughout the year. The idea is that you have a little more reading time from January to March, and maybe you’re looking for a little extra information as you plan the next season’s crop.

Now that you’re about to hit the field, we’ll give you a bit of a break. The next issue of Grainews won’t turn up until April 5.

Leeann

...
Wheat & Chaff

FARM SAFETY

Close call: teach your family respect for farm safety

Teaching kids to respect hazards is an important part of raising children safely on the farm and much can be learned from close calls.

Growing up on the family farm near St. Malo, Man., the Racine children experienced their own close call while playing in a large truck. All five kids had free range of the family’s grain farm and made toys of anything they could find. Monique Racine remembers how their imagination knew no bounds and how fearless they were.

“When I was a kid, we weren’t afraid to take a hammer, nails, and just put them into a piece of wood,” Monique recalls. “I remember taking a drill and drilling holes in aluminum bowls!”

During the harvest season of 1986, everything changed. Monique and her younger brother, Patrick, took lunch to her father and older brother in the combine as it unloaded into the truck box around him. He hadn’t yet realized his body was already stuck in the grain. He vividly recalls suddenly struggling to pull his arms out of chest-high wheat and looking over to see Monique was gone.

The wheat was above Monique’s nose and eyes already. So I got my left arm out to scoop enough wheat away from her mouth and nose constantly,” he says. “The pressure of the wheat on my chest was so heavy, I was trying to breathe so hard but I couldn’t, so I panicked... it was a nightmare.”

Outside of the grain box, his father, Emile, had returned in another truck to take the next load of wheat from the field and had expected to see the two younger kids around. Emile is not sure what it was that made him think they might be in the back of the truck.

“I came to the field to see no kids in the truck, and I just panicked,” he explains. “I automatically went to the back of the truck, opened the gate, and they both came out. Patrick says he can clearly remember Emile was “as pale as a white wall” as he knelt down to check them both over. “They were both OK but that was a very close call,” Emile says. “After that, I told them that they had to stay home.”

No one was allowed to play on equipment anymore and Monique says none of the kids could see the fun in it after that anyway. The new farm policy became “if you can’t count five heads in the yard, you can’t start up or move equipment.” Emile bought two-way radios shortly after that so there could be more communication about where the kids were supposed to be and fortunately, they never had another close call after that. Now that the kids are grown and bring the grandchildren to the farm, those safety policies are as important as ever.

Patrick says maintaining eye contact is a good policy but he’s learned the value of conducting walk-arounds too. He’s moved away from the farm and says it’s a mandatory practice on his construction worksite. Fatal accidents in the past have proven the equipment is simply too big to see everyone from the cab. In his opinion, walk-arounds ensure you really know your surroundings as an operator.

“When I work, you walk around, make sure there’s no one behind you, and no one near the equipment,” he says, “no matter what.”

Monique says their family had to learn their commitment to safety the hard way and she’s determined to teach her four-year-old daughter without another close call. If constant supervision isn’t a guarantee, Monique says she won’t let her daughter be in a position where there’s a potential safety risk. “If she’s going to go in the shop where there are chemicals, I know her, and curiosity’s gonna take over.” That’s why Monique strongly believes it’s ultimately up to parents to ensure the safety of their children. If that means insisting on hazards being put under lock and key, dedicating a babysitter to constant supervision, or simply declaring “no-go” zones, than that’s what she believes parents should do.

AGRONOMY TIPS...FROM THE FIELD

Make the most of corporate field trials

Hosting a company field trial on your farm — whether for a new seed variety, seed treatment or fungicide — is about far more than getting free product for a few acres. Instead, you should think of company trials as an opportunity to grow and learn more about new management techniques, as well as what varieties or products work best on your farm, before they’re commercially available.

When a rep approaches you to be involved in a trial, it’s because they see you as having good practices that will help provide their company important trial data at the end of the season.

But before you commit to a trial, ask yourself: “Am I ready to take this on?” You need to be willing to take the extra time to execute the trial properly through to harvest. Of course, that takes a fair bit of planning, from selecting a uniform portion of your field, to carefully calibrating your sprayer or seeding equipment to ensure everything goes in the ground as consistently as possible.

Be sure to invest the extra time at harvest to get quality yield data. Carefully mark off plot sites and use precision weighing equipment, such as a weigh wagon or grain cart with a scale, to get the most accurate measurements.

By Amy Petherick, Freelancer for Canadian Agricultural Safety Association, grnevs.ca

PHOTO CONTEST

GIVE US YOUR BEST SHOT

Kathy Thiessen sent us this photo she took from her deck at sunrise on January 27. Kathy wrote, “It looks to me like God painted a picture in the sky. Our farm home near Tomahawk, Alta., overlooks a creek in the sky. Our farm home near Tomahawk, Alta., overlooks a creek. It’s beautiful!”

Thanks for sharing this Kathy! We’re sending you a cheque for $25. Send your best shot to leann.mingue@fbcpublishing.com. Please send only one or two photos at a time and include your name and address, the names of anyone in the photo, where the photo was taken and a bit about what was going on that day. A little write-up about your farm is welcome, too. Please ensure that images are of high resolution (1 MB is preferred), and if the image includes a person, we need to be able to see their face clearly.
they can carry an additional 30 per cent of that as ballast. With the Fendt VariCopt option, tire pressure can be adjusted from the cab to further maximize traction. In fact, the 1000 Series VarioTerminal will even calculate a bunch of variables to help determine proper ballasting, tire pressure and working speed to efficiently get power to the ground. Just program in the implement you’re working with, and answer a couple of questions on a special screen.

These tractors also get some other firsts for the brand. A new, bigger cab is one of them. The door opening has been enlarged compared to other series in the Fendt brand. And the standard pale green paint gives way to Fendt’s new “Nature Green” on these tractors. It’s “characterised by a heightened intensity and depth” according to the company description. Having seen it, I have to say it is nice. Nature Green paint will now also be available on other models as an option.

When it comes to hydraulics, the 1000 Series aims high. 140 l/min is standard, but that can be spec’d up to 430 with a twin pump option. That option allows the rear of the tractor to be equipped with two banks of SCVs, each side run to six SCVs are available on the rear and one on the front. And there are separate transmission and hydraulic fluids. The company claims that helps up the recommended oil change intervals to 2,000 hours.

Under the hood, the 12.4 litre MAN diesel engine is cooled by the new CAS (Concentric Air System). The hydraulically-driven fan is positioned in front of the radiator and apparently is 25 to 70 per cent depending on environmental conditions) more efficient at keeping the engine cool. Its speed depends on cooling requirements, not engine r.p.m. The MAN engine has a rated speed of only 1,700 r.p.m., with the main working range between 1,150 and 1,550. The 1050 model delivers 1,770 foot-pounds of torque at just 1,100 r.p.m. The tractors hit a maximum road speed of 60 km/h at only 1,450 r.p.m. That low rev-high torque ability is another of the features the brand believes helps keep fuel consumption low. Just what does it cost to bring home all this sophisticated technology? North American retail pricing has now been set, and base prices range from US$420,000 to US$485,000. The tractors are ready for pre-ordering now, with dealer deliveries expected to begin in November.

And if you want one of these tractors but don’t have a local Fendt dealer, that won’t be a problem. AGCO CEO Martin Richenhagen took the stage during the Agritechnica press conference and said the 1000 Series will also be offered in the company’s yellow Challenger line. “It might say ‘made by Fendt’ or ‘engineered by Fendt’ or something like that,” he said. The Challenger version is scheduled for public introduction sometime within the next few months.
Learning about the 4Rs online

Online training offers a way to help farmers communicate sustainable practices

BY JULIENNE ISAACS

“The 4Rs” is shorthand for every western Canadian producer knows, even those outside the province. This phrase has only been around for a few years. It stands, of course, for the Right source, the Right rate, the Right time and the Right place. The 4R concept was developed by the Fertilizer Institute, the International Plant Nutrition Institute, the International Fertilizer Industry Association and the Fertilizer Canada (FC) in 2014. The Nutrient Stewardship Council launched the 4R Nutrient Stewardship Program, a voluntary certification program designed to help producers implement efficient nutrient use on the farm.

“The 4R nutrient stewardship program is a framework that allows growers to increase production and productivity while improving on-farm sustainability and environmental stewardship,” says Amanda Giambardino, manager of 4R Nutrient Stewardship for Fertilizer Canada.

4R training is available online: producers can take a variety of 4R training modules via FC’s eLearning portal. Not that it’s just for farmers. Giambardino says the programs are geared at growers, advisors, agronomists and other stakeholders who want to learn more about 4R nutrient stewardship.

The program has a strongly practical bent.

“In agriculture people wear many different hats, so if you happen to be a certified crop adviser, there are continuing education units within our courses to help the professional development,” she says.

4R training courses are available for different regions, according to Giambardino. Provincial courses are available that tie the 4Rs to local conditions and local farm profiles.

Online training is designed to fit within busy farm schedules: participants can complete modules at their own pace.

BENEFITS?

Communication is a core element of the 4R training programs: as yet there are no direct incentives for farmers to participate, but Giambardino says the language of the 4Rs can be a useful framework for producers to talk about on-farm environmental stewardship measures to people outside the industry.

“It enables them to be able to account for practices on their farm,” she says. “That’s always a hot topic in the greater sustainability sector, where questions are often raised about sustainability efforts at the farm level, and the interface of the supply chain as it connects back to the end customer.

“This training really comes in handy because it gives growers that initiative, that edge to show that they’re continuing to be great stewards of the land,” she says. Dan Heaney, vice-president of research & development and agronomy for Farmers Edge, helped develop the online training course a few years ago.

He says that though course uptake has mostly been by agronomists rather than farmers, the program has a strongly practical bent for the latter.

“I think the program takes the science of nutrient management and puts it into a practical organization that deals with decisions producers have to make,” he says. “It allows them to organize their decisions in a way that makes sense. They have to make those decisions anyways, and it gives them guidelines about good or ‘less good’ practices.”

Dean Hubbard is a producer who runs a 3,000 acre grain farm east of Clearbrook, Alta. After attending a 4R seminar in Lethbridge, he put his farm forward to do a demonstration plot for 4R training. “I selected one field to use for the demonstration plot in 2013 and have kept using 4R planning on that field since 2013. That particular field has consistently had the best yields and marginal returns in the last three crop years,” he says.

Hubbard hasn’t taken the online training program, but he says if his kids remain on the farm, he’ll ask them to complete it. “I want them to be able to properly communicate with their non-farm friends that we do care and the industry is making efforts to protect the environment,” he says. “I also believe that using 4R nutrient planning is a win-win — protect our investment in fertilizer and protect the environment.”

Many farmers may find they are simply too busy to take the program for few tangible benefits, however.

Carrie Butterwick, an agronomist with Agro Plus Sales and Services near Foremost, Alta., says she looked into the program but never completed it. “I asked myself, ‘Would this help me bring something to the farmer?’ I found that, as an agronomist, I am already advocating for this type of responsible behaviour so there was no need for me to formalize it,” she says.

“There is also no real money return for the farmer to get through it yet so they, generally, don’t want to invest their time into something that doesn’t pay back in a more concrete way.”

Butterwick believes a protocol similar to the Alberta Carbon Offset System might spur farmers and agronomists to promote 4R training — and take it themselves.

Julienne Isaacs is a Winnipeg-based freelance writer and editor. Contact her at julianne.isaacs@gmail.com.

Canola performance — driving yields with smart input choices

Driving canola yields with smart input choices starts with ESN Smart Nitrogen. Just one application of this performance product gives canola crops the nitrogen (N) they need, when they need it. Too much early-season N often encourages lodging, depletes soil moisture and leaves less N for seed production. The unmatched seed safety of ESN means that growing seedlings won’t be harmed, even when N is applied at rates up to three times higher than conventional N fertilizers (following safe rate guidelines and recommended percentages of ESN).

ESN’s intelligent technology controls N release, reducing N loss and increasing N efficiency — maximizing ROI. Even in adverse weather conditions, the benefits of using ESN are more pronounced compared to traditional forms of N.

Easy to apply...

Whether you apply in the spring or fall, during a wet or dry season, you can count on ESN to deliver N to your canola crops when they need it. With just one application, canola’s day-to-day N needs are met, giving you the peace of mind that the N will still be there, even after heavy rainfall. One-pass application also saves on fuel and use.

ESN is convenient to use and apply because the wide application window allows you to apply ESN on your schedule, and because it won’t set-up in storage, it has a longer shelf life. Other benefits include compatibility with no-till operations and flexibility of blending options.

Yield increases between 8 – 10 per cent...

As the only controlled-release nitrogen designed for agriculture, ESN delivers a significant return on investment through increased N use efficiency and performance. On average, (across varying environments, soil types/textures, and weather) canola yields increase between eight to ten per cent when ESN is the N source applied. In addition to increased yield, the single application will save you both time and money because you don’t need to reapply during the growing season.

Simply apply ESN when it’s convenient for you and leave it to work throughout the growing season. Knowing your canola nutrient diet is being taken care of offers peace of mind and more time to spend on your other day-to-day business operations.

That’s smart growing.

Maximize your N investment with controlled-release technology

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Features

Farmer perplexed by stunted peas

BY KENDRA LAING

I
n June, I found myself puzzled over a field of stunted peas that belonged to Phil, a farmer in the Lipton, Sask. area who farms approximately 6,000 acres of canola and numerous classes of wheat. I had received a phone call from Phil, asking if I could scout his pea fields as he noticed a cropping issue. He was quite concerned, as peas had been recently added into his crop rotation. That spring had brought an abundance of moisture and major downpours in the area, creating a challenge for farms with low-lying land. Phil’s pea field was affected by the excessive moisture; however, he suspected the in-crop herbicide that had been applied may have contributed to the yollowing, stunted peas.

“I do not understand why my peas are flowing off or at least looking like they are sick. I know the moisture we have had can stress out the plants and in-crop spray can set them back, but I never expected it to be this bad,” Phil said.

“My peas were doing quite well and looked healthy until I sprayed them in-crop with a herbicide. Then they just took a turn for the worse.”

As I surveyed the field, the overall emergence appeared to be relatively consistent. Taking a closer look at the pea plants, many exhibited symptoms similar to those of waterlogged plants. There was a significant contrast in colour along the terrain of the pea field. The hilltops revealed patches where the peas were a darker hue of green compared to the majority of the plants on the rest of quarter section. Elsewhere, the plants were beginning to yellow (especially in the low spots) and showed signs of pinching off at the base. In addition, their roots, instead of being a healthy white, were caramel in colour. It appeared that the affected plants got off to a healthy start with consistent emergence and an abundance of nitrogen-fixing nodules present on the roots. Unfortunately, the once-healthy plants had come to a halt in their development at a specific point, and something was causing the peas to pinch off and turn a sickly yellow colour.

Phil was worried he may have done something wrong to cause the problem, but from scouting to spraying, it certainly appeared that he had done his due diligence in nurturing his pea crop. A pre-seed burn-off had been applied, and the field had been rolled prior to planting and seeded at a suitable depth. The peas had been treated for seedling disease and inoculated to balance the seed’s nutrition. There was an adequate amount of phosphate applied and the crop had been sprayed with herbicide at the four- to fifth-node stage. Clearly, operator error was not the cause of the cropping problem as the pattern of affected plants did not indicate passes with a farm implement.

My thoughts turned to environmental factors. There had been excessive amounts of precipitation at the end of May and in the first few weeks of June, delivering close to 20 inches of water. This would have put stress on the plants, as peas tend to be sensitive to an abundance of moisture.

The moisture created a challenge for the pea plants to develop in their vegetative phase, but what exactly was causing these symptoms? If you think you know what’s behind Phil’s stunted peas, send your diagnosis to Grainews, Box 9800, Winnipeg, MB, R3C 3K7, email leeann.minogue@pcpubishing.com or fax 204-944-9541 to Crop Advisor’s Casebook. Best suggestions will be pooled and 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.

Kendra Laing is an area marketing representative for Richardson Pioneer Ltd. at Marshall East, Sask.

Grainews

CROP ADVISOR’S CASEBOOK

English grain aphids damage wheat

BY OLIVIA DENOMIE

J
ohn, a farmer who grows canola, wheat, barley and oats on his 2,000 acres near Nut Mountain, Sask., called me in late July. He was alarmed about an insect infestation in his wheat field and asked me to come out to help identify the pest.

When I arrived at John’s farm and began inspecting the problem field, I could see patches within the crop where dozens of tiny red and green bugs were consuming the wheat heads. I also observed that the headlands and field edges were the hardest hit areas.

Wheat midge was ruled out, since the insects in John’s wheat field were wingless. The grower thought they might be aphids, but John wasn’t sure since he thought aphids were always green. The bugs in the problem field were mostly red. I knew it was important to identify the pest right away, since insect infestations can become devastating very quickly. After taking some pictures and performing insect counts, I collected some bug samples to more closely examine back in the office.

While scrutinizing the samples, I confirmed that the tiny tailpipes on the posterior segments of the insects were cornicles, an anatomic feature that is unique to aphids. After some additional research, I was able to determine that they were English grain aphids, which are typically dark green with black cornicles and banded, black legs.

Why then, were the insects in John’s wheat field mostly red? More research revealed some relevant information from Scott Meers, an insect management specialist at the Pest Surveillance Branch with Alberta Agriculture. Meers noted that the English grain aphid can often be more of a red colour than green, and he went on to say recent reports indicated that the pest had in fact shifted colour and was now primarily red when spotted on Prairie farms.

Note that English grain aphids had been identified as the culprit, we then considered control options. In the end, it was decided it wasn’t economical to spray the field with insecticide due to a number of factors.

For one thing, there were no aphids present in the centre of the field. In the headlands and field edges where the aphids appeared abundant, their numbers still weren’t quite high enough to surpass the economic threshold to warrant spraying. In addition, the plants in the field were just entering the soft dough stage, which meant the wheat heads would no longer be susceptible to aphids and they couldn’t do much more damage from this point on.

While the insect infestation certainly looked serious when it was first spotted in the field, it didn’t appear to have much affect on the yield of crop, which was fortunate for John. For the grower, it was good to learn more about the types of aphid that affect cereal crops, so he’ll be better prepared should a similar situation occur in the future.

Grainews is a media sponsor of the Richardson Pioneer Ltd. at Wadena, Sask.

CASEBOOK WINNER

This issue’s Casebook winner is Joel Hofer of Joelfarms at Rosebud Colony near Rockyford, Alta. Joel recognized the problem because it looked a lot like something he’d seen in the fields at home.

Joel, thanks for reading, and thanks for entering! We are renewing your Grainews subscription for a year, and sending you a Grainews cap.

Leeann Minogue
Farm management

An Ipsos study has identified the top seven habits of successful farmers. Do you have them?

**Management drives farm profits**

An Ipsos study has identified the top seven habits of successful farmers. Do you have them?

By Li

R
esults of a new national Ipsos study clearly show that manage-
ment matters when it comes to
farm business success. The report also identifies seven key habits that have
the biggest impact on farm profitability.

The survey included 604 farms of all types and sizes and farmers of all ages
across Canada in the grains and oilseeds, beef, hogs, poultry and eggs, dairy, and
horticulture sectors, 183 respondents were grain growers.

The work was commissioned by the Guelph-based Agri-Food Management
Institute (AMI) and Farm Management Canada for the Ontario Ministry of
Agriculture, Food and Rural Affairs.

According to study results, leading farm businesses in the top quartile finan-
cially out-perform those in the bottom quartile by a wide margin: 525 per cent
increase in Return on Equity (ROE) and Asset Turnover.

Specific to grain and oilseed growers

to have financial records that are months
behind and are not being used on a regu-
lar basis for decision-making. They’re also
almost three times more likely not to
monitor their cost of production.

Rounding out the top three is the ben-
efit of using professional advisors for out-
side perspectives. Results show that farms in the top quartile are 30 per cent more
likely to work regularly with a trusted
farm business adviser or team of advisers.

The research clearly identified link-
ages between specific business manage-
ment practices and financial outcomes.
Overall, management matters and we’ve
identified the seven activities that will
make you more money in your farm
business,” says AMI executive director
Alison Robertson.

**THE SEVEN ACTIVITIES**

By far the most significant driver of
farm financial success is continuous
learning. Farms in the bottom quartile are
three times more likely to not seek
out new information, training or learn-
ing opportunities.

No. 2 is keeping finances current and
using software with the latest updates so
that key farm decisions are made based
on an accurate financial picture of the
business.

The study found that farms in the bot-
tom quartile are three times more likely
to have financial records that are months
behind and are not being used on a regu-
lar basis for decision-making. They’re also
almost three times more likely not to
monitor their cost of production.

**SUMMARY**

Overall, 73 per cent of grain farmers
surveyed across Canada felt the financial
health of their farm was a little or much
better now compared to five years ago.

Specific to grain and oilseed farms
across Canada, the results also showed:

- 74 per cent of respondents have
  the ability to read and use financial
  statements.
- 62 per cent make use of
  financial risk management
  planning.
- 59 per cent use an accounting
  system to assist in business
decision-making.
- 53 per cent use cost of
  production for benchmarking and
decision making.
- 50 per cent feel they have the
  propensity to learn and improve.
- 45 per cent of respondents feel
  they have a clear vision and
  goals for the future.
- 37 per cent have a financial
  plan with budget objectives.
- 31 per cent use farm
  business advisers.
- 28 per cent have a formal
  successions or transition plan.
- 24 per cent have a formal
  business plan.
- 18 per cent have a formal
  human resources plan in place.

Financial support for the study was pro-
vided through Growing Forward 2.

Li

Lilian Shaer is a professional farm and food writer based in
Guelph, Ont. Follow her blog at foodandfarmingcanada.com.

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MARCH 15, 2016  grainews.ca / 7
Do soybeans need phosphorus?

Phosphorus fertilizer won’t increase soybean yield, but good strategies can maintain fertility

BY ANGELA LOVELL

Soybeans are efficient feeders for soil phosphorus (P) and in most cases growers are not going to see an increase in yield from additional P fertilization, regardless of the soil test P, according to research trials in Manitoba and Saskatchewan.

Since 2013, Dr. Don Flaten and Gustavo Bardella of the University of Manitoba, together with John Heard of Manitoba Agriculture, Food and Rural Development, have been assessing the short-term and long-term effects of P fertility rate and placement on soybean stands, dry matter production and seed yield.

Soybeans remove large amounts of phosphorus. A 40 bushel per acre soybean crop removes 34 pounds of P2O5 per acre. Current recommendations are that Manitoba growers apply no more than 10 pounds of P2O5 per acre in the seedrow, to avoid seedling toxicity.

NEW TRIALS

Flaten presented some findings from their trials at Ag Days in Brandon this January.

The key message is that even in soils with very low soil test P levels (down to three ppm Olsen P) soybeans can uptake enough P from the soil during the growing season to produce high yield without any additional P fertilization.

“The lack of response in soybeans to P fertilizer is probably related to our high pH soils on the Prairies, and the fact that there are sufficient reserves of certain forms of P in these soils that our soybean crops are able to tap into, that other crops can’t tap into,” says Flaten. “We have evidence from research done 50 years ago that soybeans have a unique capability, much greater than cereals or canola, to make use of soil P reserves in Manitoba soils.”

That’s not to say that there aren’t other circumstances where P fertility might be beneficial. “Within the short term of this experiment, we weren’t able to detect yield responses to any rate or any placement of P in any one of our 28 sites, but we haven’t tested every place in the Prairies,” he says. “There may be some soils and situations where that may not be true.”

For example, in acidic (low pH) soils, soybeans can respond quite substantially to phosphorus fertilizer. Flaten has also done a lot of research demonstrating the pop-up effect of starter P in other crops, and although he didn’t see that effect in the soybean trials, there may be situations, particularly when planting into wet, cool soils, where starter P might be beneficial. “There are probably a couple of factors that explain why we didn’t see any pop-up effect in soybeans in our trials in Manitoba. We planted after the soil temperatures had warmed up to at least 10 C, which is the standard recommendation, and soybeans large seeds have substantial reserves of P in them, and that may be sufficient to get the soybean plants off to a good start,” says Flaten. “If growers wanted to plant soybeans when the soils are below 10 C, under those conditions there might be starter P responses that we weren’t in a position to measure.”

NO YIELD INCREASE IN RESPONSE

Flaten’s team’s first experiment dealt with responses to P fertilizer applied at different rates and placements, while the second experiment looked at the overall effect of P fertility in the soil.

The researchers applied monomammonium phosphate (MAP 11-52-0) in the seed row, as a side-band, and broadcasted, at rates of 20, 40, and 80 lbs. 2P2O5/ac. The soybean variety used in the trial was Dekalb 24-10RY seeded to give a plant population of 210,000 plants per acre. Researchers replicated the treatments three or four times and assessed plant stands at two, three and four weeks after planting. They collected and measured midseason biomass at the R3 stage, and assessed seed yield and quality.

None of the trial sites had any increase in yields regardless of the P treatment, and even when plant stands were reduced at five sites because a high rate of P fertilizer — 80 lb. (ac.) — was applied, only two had a drop in yield. “Plant stand density overall didn’t play a prominent role in this study,” says Flaten.

The results indicate that soybeans are a lot less sensitive to seed row placed P applied as MAP than was previously thought, says Flaten, but added seedling damage is still a risk especially in medium to coarse texturied, and sandy soils in some years, and when using wider row spacing, which can increase fertilizer concentration in the seed row. “The probability of reduced stands from typical agronomic rates of seed-placed P is small and the risk of reduced seed yields is even smaller,” he says. “Overall, seed row placement of P for soybean is a small risk, with little, if any reward.”

LONG-TERM FERTILITY

While soybeans may not respond to P fertilizer, because they are so good at tapping into soil P reserves, at some point productivity will suffer because of the lack of P fertility, says Flaten.

“We have historical examples where legume-based production eventually crashes after 10 to 12 years if there is no P fertility added. Even legumes, with a substantial capacity to take up P will eventually mine out those reserves and their yield will suffer because of phosphorus deficiency,” he says. “Other crops in the rotation are probably much more sensitive than soybeans to low P in soils, so in the long-term it’s not going to work for soybeans and in the medium term, it’s going to start hurting other crop yields before it hurts soybean production.”

Balancing P fertilizer applications with crop removal is crucial to prevent an over-accumulation or depletion of P in the soil, and many crops — such as canola, soybeans and corn — remove more P in a season than can be safely added as fertilizer. As growers have switched from low P removal crops such as cereals to grow more acres of canola and more recently, soybeans, in several areas of Manitoba, soil test P levels are declining. Compounding the issue is that P fertilizer recommendations haven’t changed since the early 1990s and don’t take into account today’s higher yielding crops.

Flaten says growers should be focusing on maintaining P fertility using rotational fertilization strategies to sustain long-term productivity in their soils, adding that more and more land rental agreements include a P balance requirement.

“There are several options for farmers to consider to maintain P fertility,” says Flaten. “They could continue to add some P with soybeans in the rotation but that may not be the best use of that P fertilizer. It is likely better to apply more P with another crop, like canola or wheat, which makes better use of that fertilizer P. For example, in wheat you can place up to 50 lbs. of phosphate in the seed row with very little risk of seedling toxicity. For both wheat and canola, there is lots of room for high rates of P if you’re side-banding or mid-row banding fertilizer.”

Growers may seriously want to consider using a livestock manure application, if that’s available to them, as an alternate strategy, adds Flaten. “If they apply enough manure to meet the nitrogen requirements of the upcoming crop, they are putting on several years’ worth of P at the same time. Livestock manure is a fantastic resource for maintaining your P fertility in these sorts of cropping systems.”

The Manitoba Pulse & Soybean Growers website (www.manitobapulse.ca) has an Interactive Phosphorus Fertilizer Calculator spreadsheet and a factsheet entitled "Phosphorus Recommendation Strategies for Manitoba" to help growers determine P removal rates of different crops and manage P fertility to achieve a maintenance range over the rotation.

Angela Lovell is a freelance writer, editor and communications specialist living and working in Manitoba. Find her online at www.angelalovell.ca.
Protected fall N improves efficiency

Nitrogen stabilizer products have a good fit where farm labour and time are limited.

BY LEE HART

D an Hacault likes to use nitrogen stabilizer products on his farm so he can fit in time management, convenience, nutrient efficiency, cost effectiveness, and availabil- ity. And easier for him to manage seeding when working by himself and oh, yes, on-farm field trials show his yields are holding steady as well.

Hacault, who has downsized to crop about 1,300 acres near Swan Lake in south-central Manitoba, has been working to improve input and time efficiency on his farm for several years. He was one of the early adopters of variable rate ferti-

lizer technology.

Now, to further improve time and input efficiencies, he has also switched to fall-applied nitrogen using two different nitrogen stabilizer products. He hires a custom applicator with a float to apply granular Super U (46-0-0) nitrogen and for other parts of the farm he also uses his own equipment to apply liquid eNtrench from Dow AgroSciences.

“We are farming fewer acres, and it is hard to find labour, it just made it much more efficient to apply the nitrogen in the fall,” says Hacault. “But because nitrogen losses can be high I wanted to use protected ferti-

lizer products.”

Another reason he has the products applied about mid-October, Hacault used banding equip-

ment in 2014 to apply eNtrench to about 200 acres of land to be seeded to canola in the spring of 2015. At spring seeding he placed granular phosphate with the seed and sidebanded li-

quid sulfur. Super U was float applied to the remainder of his crops acres in the fall of 2014. The nitrogen stabilizer compo-

nent is actually injected inside the seed pellicle, it can be fall applied to the soil surface without incorporation.

With the liquid eNtrench nitrogen, side banding places it in the top two to three inches of the soil profile. Hacault says research shows even though the nitrogen is banded, there is still risk of nitrogen losses when shallow banded if unprotected fertilizer is used.

Hacault says so far he hasn’t seen where one product has a better fit than the other. “Having the granular product float applied is very conven-

ient,” he says. “They can do the whole farm in a day and a half. But the Super U is consider-

ably more expensive than the eNtrench product.”

Hacault had most of his acres treated with the granular nitro-

gen in the fall of 2015, but will be spring-applying eNtrench nitrogen to part of his farm at seeding time. “I also allowed the products worked equally well with all crops,” says Hacault who has been producing hybrid rye, oats for a contract who this year is producing well with all crops,” says Hacault the products worked equally sowing in 2016. “I also found nitrogen to part of his farm at seeding in the fall of 2015, but will be treated with the granular nitro-

product, while N-Serve can be applied to the soil surface with- out incorporation.

Hacault has conducted his own on-

farm strip trials to see if there is any measurable difference according to the combine yield monitor. One recent trial com-

pared eNtrench against Super U against a spring-applied unpro-

tected liquid nitrogen. “We had the three different treatments and all performed equally well,” says Hacault. “I mainly wanted to see if there were any nitrogen losses with these fall applied products. And as far as the yield monitored showed all were equal. The protected products did exactly what we expected they will do. In this area with soil and moisture condi-

tions we can have as much as 60 per cent nitrogen loss mainly due to leaching, so if you can protect that nitrogen that is quite a savings.”

Dr. Rory Degenhardt, Dow AgroSciences (DAS) research sci-

entist says the nitrogen stabilizer products have the best fit in areas where moisture and envi-

ronmental conditions are most restrictive. “For example, losses can certainly be an issue,” he says. “And it can also be a concern on irrigated land in the brown soil zone. Losses can vary from area to area and from year to year, but losses in the 10 to 50 per cent range are not uncommon.”

DAS actually produces two nitrogen stabilizer products. eNtrench is a liquid nitrogen product, while N-Serve can be used with anhydrous ammonia. Both products are designed to do the same thing, which is to slow the conversion of ammo-

nium nitrogen to the nitrate form. Nitrogen is quite stable in the ammonium form, but with the combination of moisture and warming temperatures eventu-

ally it converts to nitrite and then to nitrate. And in the nitrate form it is vulnerable to leaching and denitrification losses.

Degenhardt says the stabiliz-

ers in eNtrench will certainly protect it over winter and will gradually release with warming conditions in the spring, usu-

ally having some influence until early to mid-June. Hacault says he is looking to be as efficient with crop inputs as possible. “Our fertilizer bill hasn’t necessarily gone down but now we are getting improved yields on the most productive acres and not loosing nutrients to the environment.”

And when you look at these nitrogen stabilizer products, on one hand they are more expen-

sive, but when you consider your time, and equipment, get-

ting the crop seeded in a timely manner and potential for nutri-

ent loss, I really believe the cost is about the same, and perhaps even offers some savings.”

Lee Hart is a field editor with Grainews based in Calgary. Contact Lee at 403-552-1164 or by email at lee@fbcpublishing.com.

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Soybean research underway

From variety development to agronomy advice, soybean research is bringing new options

BY ANGELA LOVELL

In 2015, soybean acres in Manitoba increased by more than four per cent over 2014, to 1.34 million acres. “We have doubled our soybean acres in Manitoba over the past five years,” says Kristen Podolsky, production specialist with Manitoba Pulse & Soybean Growers (MPSG). “That has been a direct result of their ability to tolerate wet soil conditions in the Red River Valley and breeding programs, which have increased.” Shorter season varieties, which also have good yield potential, to facilitate soybean expansion into western Manitoba and Western Canada. Soybean acres took a dip in Saskatchewan from 300,000 acres in 2014 to 250,000 acres in 2015, likely due to a combination of frost damage to some fields and economics favouring canola over soybean in some areas. But last year’s soybean yields were higher than growers had ever seen in the province, says Sherrilyn Phelps, agronomy and seed program manager for the Saskatchewan Pulse Growers (SPG). Soybean production in Saskatchewan is slowly increasing as shorter season varieties come to market, but most production is still concentrated in the southeast corner. Soybeans are attracting a lot of attention from Prairie researchers looking to develop shorter season varieties.

Variety evaluation trials organized by Manitoba Agriculture, Food and Rural Development and MPSG, in co-operation with the Crop Development Centre (CDC) at the University of Saskatchewan, have been evaluating early maturing soybean varieties for more than a decade. This year the trials involved 52 sites in Saskatchewan and six in western Manitoba, and assessed 36 different entries from breeding programs across the country. “This material is at least one level shorter maturity than what would typically be grown in the Red River Valley,” says Dr. Tom Warkentin, a pulse researcher at the CDC. “Even in that case, when we assess days to maturity the range that we’re publishing in the Saskatchewan Seed Guide is going from 118 up to 250 days. So that’s still quite a long season for this part of the world.” Warkentin says Saskatchewan growers have been fortunate in the last few years that most of these varieties have reached maturity before a killing frost, but this year also had seasons where the first killing frost has been later than average. “We feel that there’s still a big need to select types that have a little shorter duration while still maintaining good yield,” he says.

PESTS AND DISEASE

Although much of Manitoba has been in a wet cycle for the past few years, growers need varieties that can perform in all conditions. MPSG is funding a research project at Agriculture and Agri-Food Canada’s Brandon Research Centre, led by Dr. Ramona Mohr, to assess soybean varieties under varying moisture conditions. Although soybean pests, such as stinkbug and diseases such as sclerotinia white mould, are not as problematic as they are in the U.S., researchers are keen to keep ahead of the curve by building resistance before they become a serious concern for growers in Western Canada.

More varieties are coming out that have soybean cyst nematode resistance, as well as resistance to Phytophthora root rot, which can be caused by multiple different races, and no one yet has a handle on exactly which races of Phytophthora are present in soybean fields across the Prairies. “We have been funding a project over the past two to three years with Dr. Deborah McLaren, a pathologist who has been surveying fields and collecting samples,” says Podolsky. “We are expecting this year to release what the most prevalent races of Phytophthora are in Manitoba soybean fields, which will provide a great tool for growers to match the resistant varieties that are available.”

Jordan Ranneman is leading research at the University of Manitoba to determine the best ways to manage the natural enemies (NEs) to soybean aphid present in farmers’ fields, to determine whether spraying is economically viable. Farmers can use a Dynamic Action Threshold (DAT), developed by Dr. Rebecca Hallatt at the University of Guelph, to estimate whether or not the NEs are likely to reduce aphid numbers to the point where spraying is not necessary. Four Ontario soybean growers recently tested the DAT system. Based on the results, none of them chose to spray their fields, which never reached the injury level threshold of 675 aphids per plant. Iron Deficiency Chlorosis (IDC) can also be a problem, particularly during wet growing conditions. “On the prairies we have calcareous soils and a higher pH which can increase problems with IDC, so IDC tolerance is another important attribute that growers should look for in today’s soybean varieties,” says Podolsky. Research is currently underway at AARDC in Morden, Man. to evaluate soybean breeding lines for IDC resistance.

MANAGING WHITE MOULD

There are only four fungicides registered for control or suppression of sclerotinia white mould in soybeans in Western Canada: Accupel (DuPont), Priaxor (Bayer), Allegro 500® (Syngenta) and Delano (Bayer CropScience).

Dr. Michael Wunsch of North Dakota State University, speaking to agronomists at the Manitoba Agronomists Conference, said U.S. research has shown an average reduction of around 45 per cent with a fungicide application at optimal timing. But, he adds, getting good coverage with a fungicide is vitally important to control white mould.

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Wunsch said fungicides must be applied prior to sclerotinia infection but must also be applied when it is possible to achieve the fungicide coverage that is needed for that fungicide chemistry to provide satisfactory sclerotinia control. Results of field trials conducted to-date strongly suggest that the fungicides currently available in Canada must be applied at bloom initiation (R1 growth stage) to achieve satisfactory control of sclerotinia.

Shorter season varieties are generally less susceptible to white mould than longer season varieties, but the timing of wet weather matters in terms of white mould infection. Wunsch’s research under irrigation has shown there is a higher likelihood of infection if soils are moist during late vegetative growth and bloom initiation, and cool, wet weather occurs during bloom and early pod (R2 and R3) stages. Low precipitation falls is also important. “If you get frequent, light rainfall events you are much more likely to have severe white mould than if you get infrequent, heavy rainfalls even if the amount of water overall is the same,” says Wunsch.

Wider row spacing reduces the risk for white mould, but may not compensate for the yield drag generally associated with wide rows. Wunsch emphasizes that western Canadian soybean growers will have to experiment with different management strategies to determine what works best under their own conditions.

On-farm research studies conducted in eastern Manitoba have shown a significant yield response to fungicide application in only three out of 21 trials conducted from 2014 to 2015. “We aren’t seeing a consistent economic response to fungicide for several reasons,” says Podosky. “First, sclerotinia although present at low levels, has generally not been yield limiting in the majority of Manitoba fields and the products being used are not registered for control of this disease in particular. Secondly, the most common foliar leaf diseases that are present are bacterial blight, which is not controlled by a fungicide and septoria brown spot which again is generally not yield limiting. I think the focus going forward needs to be on root rots and late-season stem diseases which have more potential to impact yield as we grow soybeans more intensively.”

MANAGING WEEDS

Weed management in soybean is relatively straightforward, as most varieties available in Western Canada are glyphosate tolerant. However, herbicide-resistant volunteer canola can be a problem in soybean crops. A team at the University of Manitoba led by Dr. Robert Gulden is researching different herbicide options and the use of tillage to help reduce the canola seed bank. An early fall tillage can remove canola seed left behind in the field to emerge and be killed off during the winter, said Gulden, who shared some of his research findings at MAC.

He has also found that herbicide timing is important. Applications are most effective in preserving yield if they are made during the critical weed-free period for soybeans, but Gulden’s team is still trying to determine exactly when that is for Western Canada.

ACREAGE ON THE RISE

What’s really been driving the increase in soybean acres, particularly in Manitoba, has been a combination of environment and economics, says Podosky. “Soybean’s ability to adapt to wet conditions — which have been very prevalent over the past five years — has likely been a driving factor, and they have also been able to deliver good yields that are comparable, if not better, than other crops in rotation,” she says. “Soybeans also spread out the busy seasons for farmers, and we continue to have a good market for soybeans so that has been important as well, but overall it has been the ability to grow well in wet conditions and compete economically with other crops that has attracted growers to soybeans.”

On-farm research studies conducted in eastern Manitoba have shown a significant yield response to fungicide application in only three out of 21 trials conducted from 2014 to 2016.
No GMOs for farmers in Switzerland

After moving from Alberta to Europe, Marianne Stamm finds a different consumer culture.

BY MARIANNE STamm

S he chops onions, carrots and potatoes, adds them to the sizzling oil in the fry- ing pan. The oil isn’t from genetically modified (GM) canola, and never will be if Monika Wanner, a Swiss farmwoman, has her way. “We have good prod- ucts in Switzerland,” she says. “We don’t need GMOs.” That growing GMOs is banned in Switzerland tells her they must not be safe. She grows a big garden so she knows what’s in her food. Her shopping list follows the principal: whenev- er possible regional and seasonal.

When we farmed in Canada, at Westlock, Alta., I never had to defend myself for growing GM canola. Everyone grows it there. Ninety per cent of Canada’s can- ola is genetically modified. There might be the odd discussion where someone wonders if it really is safe or they don’t like the reliance on mega companies like Monsanto. But I think twice before I tell my Swiss friends that we grow GM canola. Most of them feel like Monika.

I know why Canadian farmers grow GM canola. Conventional canola was a good cash crop, but it messed up fields. The herbicides available missed some weeds, giv- ing them a happy year to multiply: GM canola cleans up a field, instead of contaminating it. And it does it with greater yields. For the farmer it is a win/win situa-

It will be a long time before Swiss canola will be genetically modified.

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EUROPEAN CONSUMERS

Elsabeth is an informed con- sumer and thinks carefully about what she buys for her family. She would never knowingly purchase a GM product. We don’t know enough about its safety, she says. She worries about biodiversity, that in time there will only be a small amount of varieties grown, leaving us more vulnerable to disease outbreaks. Where is the gene pool, she asks? Elisabeth also doesn’t like the heavy depend- ence on a very few big corpo-

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dictate everything,” she says. She understands the dilemma though, of decreasing our environmental footprint in a way that still allows the farmer to make a profit.

GM products aren’t necessary to combat world hunger, says Rahel Brixach, president of the Schaffhauser Farmwomen. Most GM products are produced for ethanol production anyway, she thinks. Swiss farmers are only paid subsidies if they plant at least four different crops. That assures a good rotation and keeps biodiversity. Like Elisabeth, she worries about unforeseen consequences and resistance issues. She too says, “We don’t need GM products.”

Barbara Eisl is a board member of Konsumenten Forum, the oldest Swiss forum to protect the interests of the consumer. “The Swiss consumer is fundamentally critical towards genetically modified products,” she says. For most, it’s more of an abolition than founded on facts. They want safe food and are prepared to pay more for it. Switzerland has some of the most stringent food production regulations in place (and consequently some of the highest farm subsidies). Food produced in Switzerland is seen to be safer than imported food, even from the EU. Like Monika, many consumers look for regional and seasonal products, preferably organic ones. Even discounter stores like Lidl and Aldi have a good selection of organic products now.

Switzerland may be a bit different, Eisl thinks, than some of the EU. Farms are small and rural areas are the playground of the urban population — they hike and bike past their food. The close proximity of producer and consumer means there is more interaction. Consumers see farmers spraying their fields and want to know why and if that is safe. Environmental lobbying such as Green Peace and animal rights groups are very pronounced in Switzerland. The Swiss consumer is fundamentally interested in the interests of the consumer. “The European consumer. In Europe, the consumer really is King.”

Dr. Michael Winzeler is manager of the Protected Site, where Swiss research on GM products is carried out. The two main projects are fungicide-resistant potatoes and apples. Switzerland has a moratorium on producing GM products until 2017 and it is expected that it will be extended another five years. In a November 2015 article in the UFA Revue, Winzeler discusses GM acceptance with organic farmer Markus Bopp. “Even if science could prove beyond a doubt that GM products are absolutely safe, that doesn’t mean the consumer would buy them,” Winzeler is quoted, adding that studies have shown that more knowledge doesn’t automatically bring a change of purchasing habits. “The Americans have more faith in technology and don’t ask as many questions,” Winzeler believes. “Europeans are more environmentally sustainable.”

“When it only takes three fungicide applications instead of 15, I would be interested in GM potatoes too,” he says in the Revue article. Felix Ruh is a farmer and crop protection consultant in Switzerland. When he first heard of GM foods, he was quite excited. Now he is more wary. This last spring glyphosates came close to being banned for Swiss farmers. Already the large department stores have taken glyphosate out of their garden supplies. There are media stories of glyphosate poisoning. Monsanto can claim it is perfectly safe, but Ruh is no more convinced than most Europeans. As a plant protection consultant he is concerned about weed resistance. “How are we going to control those?” he asks. He also doesn’t like the heavy dependence on one or two mega corporations like Monsanto.

The pressure of the Swiss consumer is huge, Ruh says. If something happens, it’s the farmer that will take the blame. At this point farmers believe the cons outweigh the pros. They don’t want to jeopardize their reputation for producing safe food. Being GM free is part of that reputation. As Bopp says in the Revue article, “For the Swiss farmer to accept GMO products there would have to be a very significant bonus. That isn’t the case at this point.”

Not at this point, but most scientists, many farmers and even some consumers believe that it is inevitable that GM products will be grown and sold in Switzerland at some point. I’ve seen the big swing from conventional to organic food in the grocery stores in the last 10 years. Maybe in 20 years there will be as many GM products on the shelf, and even discounter stores like Lidl and Aldi have a good selection of organic products now.

“GM products are produced for ethanol production anyway,” says Rahel Brixach, president of the Schaffhauser Farmwomen. Most GM products aren’t necessary to combat world hunger, she says. Increasing our environmental footprint in a way that still allows the farmer to make a profit, GM products aren’t necessary to combat world hunger, she says. Rahel Brixach, president of the Schaffhauser Farmwomen. Most GM products are produced for ethanol production anyway, she thinks. Swiss farmers are only paid subsidies if they plant at least four different crops. That assures a good rotation and keeps biodiversity. Like Elisabeth, she worries about unforeseen consequences and resistance issues. She too says, “We don’t need GM products.”
Oleic soybeans not ready for the West

High oleic soybean varieties and their high premiums will not be in the West soon

By Angela Lovell

High oleic soybean varieties may not be coming to Western Canada any time soon, but if and when they do, they will offer growers a bit of a premium.

“We have a long history in southern Ontario of growing IP (identity preserved) soybeans or soybeans for special end use markets, and some of those markets command quite a high premium,” says Dave Harwood, technical services manager with DuPont Pioneer. “The premiums associated with high oleic soybeans would likely be more modest but they would also have all the agronomic benefits of oilseed soybeans, such as glyphosate and soybean cyst nematode resistance, as opposed to food grade soybeans, so it would still be a pretty compelling economic scenario for a grower.”

Growing a Market in Canada

DuPont Pioneer was the first company to introduce its high oleic soybean variety, Plenish, into Canada. In 2009, the Canadian Food Inspection Agency authorized the trait in Canada, which presented the opportunity to grow a pre-commercial volume in southern Ontario in 2010 for test crushing, and make the oil available for potential end-use customers to try, says Harwood. DuPont Pioneer has partnered with the Grain Growers of Ontario to jointly fund the hiring of a marketing development consultant who has explored and developed opportunities for Plenish oil in the Canadian oilseed market.

It’s the typical chicken and egg scenario that often hampers the widespread adoption of a new commodity, says Harwood. “In order to commit to a new version of a commodity, end users want to be assured that there’s a reliable, consistent supply,” he says. “Growers are not really excited about creating that supply unless they know there’s a strong end use market. So those two forces compete with one another in the early stages of a refined or modified version of a commodity and they’re at that awkward period in Canada.”

The fact that Plenish is also a transgenic crop so it doesn’t have approvals in some major export markets, such as Europe and Japan, is also another impediment to end users adopting the product, especially in Eastern Canada, where soybean crushers export a significant amount of product to those markets.

Ambitious Predictions for High Oleics

For growers, there would be little difference in agronomic terms or in yield performance with high oleic soybeans compared to regular soybean varieties. “The plants have resistance to glyphosate, the primary herbicide resistance in soybean,” says Harwood. “They have the same sort of disease package, with resistance to soybean cyst nematodes, which is the primary soil borne pest to soybeans. High oleic soybean could be completely substitutable with existing soybean in most oil applications.”

The U.S. soybean industry is predicting great things for high oleic soybean oil. QUALISOY, a independent, third-party collaboration of U.S. soybean industry partners, including farmers, which has been established to deliver new and improved soybean traits that provide more value for producers and the industry, is predicting that there will be 18 million acres of high oleic soybeans grown in the U.S. by 2024.
producing 9.3 billion pounds of oil. In contrast, just 0.09 million lbs of high oleic soybean oil was produced in the U.S. last year.

Whether the industry will meet this ambitious target or not, Harwood believes there is definitely a good opportunity for high oleic soybean oil to win back some market share from other healthy oils like canola. High oleic soybean oil is low in saturated fat and linoleic acid, and contains no trans fat, which is important to consumers, and has high heat stability, increased fry time, and extended shelf life, which is important to end users in the food industry. Harwood says what surprised him was the interest from other industries, such as car manufacturers and cosmetics companies, when the company did the test run in 2010, showing there is good potential for developing a strong, diversified market for this versatile oil.

Oleics on the Prairies

High Oleic soybeans will likely be introduced first into the higher heat unit zones in Ontario, so just when are Western Canadian growers likely to be able to grow them too?

“The technology isn’t being deployed over a wide range of maturities, but the last sliver of maturities on the northern fringe will undoubtedly be on a slower timeline for deployment,” says Harwood. “From the agronomic testing of the material we have done so far, it seems to behave consistently across a wide range of geography. In development are varieties that would take us very close to the Canada/U.S. border and they’re very close to commercialization, but moving that little bit further north will take a little bit longer.”

Monsanto also has a high oleic soybean variety, Vistive Gold, which it has been field testing over the past three years in Indiana, Michigan and Ohio. A pilot introduction is planned for the upcoming season in Iowa. In a news release last August the company said it continues to make progress toward commercial introduction of Vistive Gold soybeans in 2016.

Angela Lovell is a freelance writer, editor and communications specialist living and working in Manitoba. Find her online at www.angelalovell.ca.
High-priced oil from a goat’s rear end

A traditional oil made by in Morocco is now a hot product for the cosmetic market

BY LARRY GOMPF

Seeing a bunch of goats standing in a tree and munching away is hard enough to believe. It’s even harder to believe what they’re producing, how, and how much it sells for.

But goats in trees are what tourists encounter on the highway that runs from Marrakech to Essaouira on the Atlantic coast of Morocco. During a visit last April, our driver stopped to allow my wife and I to take a picture as the goats munched away in the trees.

They’re eating the nuts from the argan tree (Argania spinosa). The trees are prickly but that doesn’t bother the goats. They are only attracted to the husk that tightly surrounds the nut. The goats chew off the husks and ingest the hard nut, which passes through their digestive system. The argan nuts are then carefully extracted from the dung. They are washed and transported to a women’s co-operative, which takes over processing of the nuts into an oil, which is being sold as a cosmetic for more than $30 per ounce in North America.

Local Berber women crush the nuts with stones. The kernels or pits are dropped into a “quern,” which is a mill made of two stone wheels. The top stone has a handle and when it’s turned, the pits or kernels are crushed which creates a paste while some of the oil is extracted.

Although the women are adept at turning the wheel, tourists start to feel it in their arms after a few revolutions. It’s not easy work.

The paste is squeezed, most often by hand, to extract the rest of the oil. The remaining paste is used for animal feed or made into soap. The shells are often ground for use in pottery or as a skin exfoliant.

It takes approximately 1.5 hours of labour and 30 kilograms of kernels to make one litre of oil. A single tree in a good year can produce 150 kg or enough for five litres of oil. The oil is rich in essential fatty acids, and it is more resistant to oxidation than olive oil.

TWO USES

There are two types of argan oil— one is used in cosmetics and the second for cooking.

Cosmetic oil is traditionally used on hair, to treat sunburns and to help relieve eczema. Deep in the heart of the medina (market) in Marrakech, a shop owner named Ahmed showed us freshly crushed oil in two different jars. Opening the first jar, he said, “This oil has been filtered only one time and has a nutty scent. This second one has been filtered at least two times,” he said. “It has a little smell and is much clearer than the oil that was filtered only once.”

Ahmed recommended that single filtered oil be used for dry skin and the double-filtered oil for its anti-aging properties. The cooking oil is from kernels that have been lightly toasted. It is golden brown in colour and has a nutty flavour. It is used on salads, on porridge, for dipping bread, on couscous and even desserts. Argan oil isn’t used for frying because it’s not very heat stable.

EXPORT DEMAND

There is a growing export market for argan oil and it’s shipped around the world including to Canada. In order to meet the increasing demand, newer technology had to be adopted to speed production. When the ripe nuts drop from the trees, women gather the nuts, which are dried in the sun and husks are removed.

Although old-style oil production still takes place at the co-operatives run by women, others have been able to purchase modern presses to squeeze the oil from the kernel. This cold-press method speeds the extraction and greatly reduces the workload from the old grinding methods.

Oil from the cold-press operation has a lower water content, which extends the shelf life, which is important for the growing export business.

There is a danger that demand might outstrip the country’s ability to produce the oil for export and still maintain enough supply for domestic use. Argan trees take up to 30 years to reach maturity and they are constantly being cut down for firewood, for timber, for cultivation and grazing by goats. Because argan forests have been reduced by a half in the last 100 years, the region has been designated a UNESCO reserve. Argan trees are also found in the western Mediterranean area of Algeria. And more recently, Israel and the United Arab Emirates are attempting to grow hybrid argan trees but as they take so long to establish, results of their efforts are not yet known.

Argan oil has such a good reputation that many companies advertise it as the main ingredient in their products. Words like “Moroccan oil,” are used to help sell skin creams and hair-care products. But it’s necessary to read the labels— many products contain some argan oil but it might be listed as the fourth or fifth ingredient, and its percentage is not listed on the product’s container. Other ingredients like coconut oil, sunflower oil and even canola oil are mixed with argan oil and are listed on the container. Pure argan oil can be purchased but it’s necessary to read the labels carefully. And, pure argan oil costs more. Some companies sell the pure product direct, so if you’re interested, check the Internet.

Goats in trees make for a good story and it’s fun, but remember, it isn’t the whole story.

Larry Gompf is a retired agronomist and a former writer for Grainews.
Kiwi secrets to growing record wheat

This New Zealand farmer has grown wheat yielding 232 bushels per acre

BY LILIAN SCHAEER

A n agronomist from New Zealand who helped a grower in that country set world wheat yield records was a guest speaker at this year’s Southwest Agricultural Conference in Ridgetown, Ont.

According to Graeme Jones, arable business manager with PGG Wrightson Seeds, the recipe has three key ingredients: environment, management and genetics.

Although the current wheat yield world record is held by a grower from the United Kingdom, Mike Solaris of New Zealand set the record first in 2007 with 228.448 bushels per acre and then again in 2010 with 222.507 bushels per acre. He farms 144 hectares (approximately 355 acres) at the bottom of the country’s South Island.

New Zealand isn’t a global player in wheat production, its crops are used predominantly in domestic milling and in feed for the nation’s large dairy sector.

“We started making the biggest quantum leaps in the late 2000s and although we’re a small producer internationally, we have high yields and quality,” Jones said.

The long growing season and a moderate maritime climate is one major advantage for New Zealand wheat growers. Long, slow growth due to a mild climate with few extreme stress events — like temperatures over 30°C — makes for an ideal cropping environment, and high energy winter sun produces a rich plant that’s ready for spring, said Jones.

According to Jones, the basic rule of thumb for nitrogen application is 60 per cent applied by flag leaf and 40 per cent applied after flag leaf at early ear emergence.

“We have to be environmentally conscious when putting nitrogen on. Over or under fertilizing causes economic losses, so use small amounts early and more in the middle stages. High-yielding wheat crops need more nitrogen especially later in the growing season,” he said.

A robust fungicide program is needed to keep the canopy alive and maintain it, Jones stated, adding that the strategy is to keep the ear and the top three leaves clean.

This year, in an effort to add to his world record credentials, Solaris is experimenting with trace elements on his current wheat crop, including manganese, zinc, copper and iron.

Another change he’s made is the number of grains per square meter — his world records were set with 500 to 600 grains per square meter, and this year he is working with 750.

Lilian Shaer is a professional farm and food writer based in Lakesh. Read her blog at lianshaer.com.

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Investing in vertical tillage tools

When it comes to vertical tillage, there is no “one size fits all” for every job

BY LISA GUENTHER

F

armers struggling with excess residue, moisture, or compaction are experi-

encing various forms of tillage. But many questions remain about how to best use the equip-

ment on the market today.

In the fall of 2014, the Buiten-

huis and Baillargeon families ran a tillage demo at their farm near Edam, Sask. They ran seven dif-

ferent tillage units, plus used a Sumo Subsoiler on a compacted field. This winter brothers-in-law Camille Baillargeon and Bryan Buitenhuissat down for an on-

farm interview and to explain what they saw and what they saw the following crop year.

Marla Rieken also spoke to Grainews about vertical till-

age. Rieken is a land manage-

ment specialist with: Manitoba Agriculture, Food and Rural Develop-

ment.

Here are their thoughts on what farmers should think about before investing in and using tillage equipment.

IS IT TRULY VERTICAL TILLAGE?

Both Rieken and Baillargeon cautioned that not all equipment advertised as vertical tillage is truly vertical tillage.

The coulter, whether it’s waved or straight, should go straight up and down in a vertical tillage imple-

ment, Rieken noted. There should be no crouching, and no angle on the gang. The same goes for a deep tiller or subsoiler—it should be straight up and down, with no curve to the bottom, she said.

“You’re not flipping soil. You’re just slicing soil,” said Rieken.

Slicing instead of flipping means there’s less risk of damaging soil structure. Rieken recommended farmers in no-till or minimum-tillage systems look for less aggres-

sive units to avoid damaging soil and stubble standability.

ARE YOU TRYING TO MANAGE RESIDUE?

Buitenhuissaid the biggest thing is figuring out what you’re trying to accomplish with the machine first. Baillargeon concurred, not-

ing that certain units perform bet-

ter under certain conditions.

One reason a farmer may use vertical tillage is to manage resi-

due. But Baillargeonsaid he’s heard from other farmers of prob-

lems when vertical tillers bury resi-

due in dirt. During seeding, some new precision drills will pull up that wet residue. It builds on the shank until the shank plugs, creat-

ing “dead zone” in the field, he said. He noted it could partly be a problem with settings.

Bigger combine headers also make it tough to get an even spread, Baillargeon said. The solu-

tion might be retrofitting the com-

bine or updating the parts in the back to get an even spread, he added.

“If residue is your problem, maybe instead of investing a bunch of money in tillage equip-

ment, maybe you just need to be investing money in your com-

bine.”

ARE YOU DEALING WITH COMPACTION?

Baillargeon and Buitenhuiss had a compacted field, where the water pooled and created anaerobic conditions. In the fall of 2014, they ran the Sumo Subsoiler through the field.

In the spring of 2015, they took a tillage demo. The 2015 was a “tough year” to measure results from the sub-

soiler because it was dry early on, Baillargeon noted. But Buitenhuissaid once they lost rain, the water infiltrated areas where they’d used the subsoiler. And Baillargeon adds the pen-

etrometer showed the baillargeon broke the hardpan. “But sometimes that’s not the best thing because what hap-

pens when you drive on it?” Baillargeon asked. Managing traffic isn’t easy on his farm, as well as areas pop up in different spots year to year.

“You have to start changing your traffic because you can’t wait for it to dry out forever,” Baillargeon said.

Last year there was no yield difference between the check and treatment in the Sumou-

treated field. Baillargeon’s wife, Carol, also dug up roots to monitor their growth.

“And we were finding, in those dry conditions, those roots are still finding their way down,” said Baillargeon. But he thinks they would have seen more benefit to the subsoiler if it had been a wet year.

As for the other treatments, they didn’t take them to yield. They didn’t see any significant differences either, but it was a strange year, Baillargeon noted. For example, the late spring frosts negated any potential benefits of blackening the soil.

TIMING IS IMPORTANT

Baillargeon said they also demoed a different unit in the spring of 2014. That May, they’d had about seven inches of rain, and they were antsy to get on the field. Baillargeon said it looked like the tiller was doing a nice job. But it was like “fluffing a pillow,” Baillargeonsaid. The soil quickly returned to its compacted state.

The shearing action of the disc also created a hard pan. Baillargeon was reluctant to name the implement because other machines would have caused the same problem, he said. Besides, it was too wet to be tilling, he added.

A disc with shearing action, combined with moist condi-

tions, is a recipe for compac-

tion. If the gang has an angle, it can “scrape underneath,” and bring a compacted layer to the surface, Rieken explained. Moist soil, near field capacity, is at the highest risk of compac-

tion. Rieken suggested farm-

ers wait until the soil is dry before using vertical tillers or other tillers.

But working the soil when it’s too dry also boosts erosion risk, she cautioned. Farmers should also keep in mind that speed has more to do with tillage erosion than depth, Rieken said. And no going shal-

low but going at high speed is going to throw soil farther.”

That puts tillers into “a little bit of a catch-22” because the equip-

ment needs to go fast to work properly, she said.

KNOW WHAT LIES BENEATH

Baillargeon pointed out that in some areas “hard pan’s not the worst thing in the world.” Subsoiling a spot can “open something up that you don’t want opened up.” One of Baillargeon’s friend’s broke a hard pan only to have water seep up and create more problems. Rieken said if a hard pan is holding a high water table in check, breaking it will allow the water to seep up. It’s more likely to happen with a deep ripper or a subsoiler, as they’ll run 18 or 20 inches deep, she added.

A naturally occurring hard pan is likely to show up in soil surveys, Rieken said. It will be listed under the agricultural capability of the soil, as a “1” rating, she added. That rating refers to a dense layer that may or may not have water undershoot. Often the soil survey report will also note a high water table, she said.

Water’s not the only thing that might be hiding in your soil. Farmers in northwestern Saskatchewan are well acquainted with rocks.

“The rocks you dig out with a subsoiler, you don’t just pick them up and throw them in the back,” said Baillargeon. They were the size of a table, he added. That meant pick-

ing them up, one at a time, with a rock picker, potentially causing more compaction, he added.

The Baillargeon and Buitenhuiss families plan to keep monitoring the treated areas to see if differences develop with the year.

Meanwhile, despite the potential drawbacks, Rieken’s not completely against vertical tillage. It “definitely has a place in people’s tool kits” for managing soil, she said.

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Betting on the biological business

Monsanto is investing big in bacteria, fungi and other organisms that benefit crops

BY LISA GUENTHER

Much of Monsanto’s biological strategies hinges on its partnership with Novozymes. The business relationship, called the BioAg Alliance, sees each company maintaining its own research pipeline, Bartlett explained.

Both companies are “front-loading” that pipeline, Bartlett said, to create “transformational, industry-leading products,” Bartlett said. That means everything from nematode-destroying biocontrols to yield-enhancers.

Enhanced, a yield-increasing corn inoculant is the “first big blockbuster” to come out of the BioAg Alliance, Bartlett said. Microbials don’t tend to be stable enough to be applied as seed treatments in corn manufacturing facilities, Bartlett said. But Enhanced can be applied as a seed treatment at corn manufactoring facilities, and remains viable on the seed for several months.

Bartlett said they can use what they’ve learned about the corn inoculant for canola. "Or translate that to other crops like peas and lentils, which are obviously really important here in Canada."

The BioAg Alliance puts new biologicals through several years of field testing before releasing them on the market, Bartlett said.

“We’ve shown that through the robust field trial program we have, we’re able to really filter out year over year those things that perform broadly as well as that perform consistently in different environments and in different climates,” Bartlett said.

 Asked whether some biologicals prefer certain soil types, Bartlett said they are “vigorously trying to understand that” for all their products. The BioAg Alliance sometimes finds biologicals used in vegetables — that also work in row crops. But Bartlett said they focus on finding unique microbes that haven’t been tested.

This requires what Jon Treloar calls “bio-prospectors.”

“Both groups — Monsanto and Novozymes — have folks prospecting out into forests and native pastures and cropland and take soil samples and find these microbes,” said Treloar.

BILOGICALS IN WESTERN CANADA

Treloar is a technical agronomist with Monsanto, based out of Saskatoon. He heads up Monsanto’s field testing program for biologicals.

The Canadian field testing program takes products that are further down the research pipeline. Part of that program includes small plot trials. Each small plot trial is replicated six times at each location, Treloar explained.

But, Treloar said, producers really like to see field-scale trials, with data from their areas.

Big Data

Biologicals aren’t the only area where Monsanto is investing. Ryan Bartlett, who leads the company’s commercial field testing, said they’re also trying to understand how to use prescriptive farming.

To that end, Monsanto acquired the Climate Corporation, a weather data company based out of San Francisco. Bartlett explained they wanted to understand how to take weather data, soil data and other “components that go into what makes a crop yield and understand how we better manage a crop up front.”

The “long-range dream” is to use all the data collected from a grower’s field to alert growers to developing disease problems, such as sudden death syndrome in soybeans, Bartlett said. If farmers confirmed early disease symptoms through scouting, they could then apply a biological or fungicide.

“We’re not there today, but we’d really like to start working towards that,” said Bartlett.

That approach isn’t about just selling a biological product to drive DERA’s germplasm, Bartlett said. It’s about selling a system to take advantage of synergies, he said.

That means making sure that any products that go into a bag of seed work together, so the grower benefits from each component, he added.

So Monsanto launched field scale trials with cooperating farmers to test new microbial products. Plots are 40 acres or more, Treloar said. The program, branded “Ag Advantage Trials” (BAT), tests products that aren’t quite on the market yet. The field programs use data from back up product claims when they’re ready to launch products, Treloar explained.

Monsanto also hires summer students to work with producers during the trials. The summer students take farmers into the fields, dig up pea and canola plants, look at the roots, and explain what the products are doing, Treloar said.

“You might not see much above the ground. It’s not until you dig the plant and look at those root systems”

Treloar also tests products that are already on the market. For example, he ran trials for TagTeam, comparing its performance to a competitor product. That trial included 24 locations — 12 on peas, and 12 on lentils.

TagTeam pea treatments yielded higher than the competitor 75 per cent of the time. TagTeam’s win rate on lentils was 92 per cent, he added.

Treloar noted that TagTeam lost on some of those trials. “But we publish that as well.”

NEW PRODUCTS COMING DOWN THE PIPE

Western Canadian farmers can look for new biologicals in the next few years. This year Treloar will be testing a new seed inoculant, branded QuickRoots, in his field-scale trials on wheat.

This product enhances nutrient availability of phosphorus and other organic nutrients, Treloar said.

“It’s pretty rock star, to be honest. From what I’ve seen in my field program, I’m excited about it.”

The inoculant is already registered, and Monsanto will be selling limited amounts in 2016. They’ve targeted 2017 for a big launch.

QuickRoots was originally a Novozymes product. “The technology comes out of South Dakota. And it’s got quite a following, kind of through the Hetty brothers network,” Treloar said. The Hetty brothers have an agronomy radio program called Ag PhD.

By 2017, Enhanced will be in Treloar’s BAT program. Treloar said he’ll be testing the new inoculant on both peas and canola. Enhanced is already in the Canadian Food Inspection Agency’s approval queue.

“As an industry, we definitely see this (biologicals) as revolutionari because it’s the opportunity to take advantage of the inputs growers are already utilizing,” said Bartlett.

Video interviews with Jon Treloar are online at Grainews.ca.

Lisa Guenther is field editor for Grainews based at Livelong, Sask. Contact her at Lisa.Guenther@fbcpublishing.com or on Twitter @LisaG2013.

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New soybean cyst nematode solution
Syngenta has a new biological seed treatment to fight soybean cyst nematode

BY MELANIE EPP

Last June, Syngenta Canada Inc. announced the registration and launch of a new biological seed treatment for soybean cyst nematode (SCN), Clariva pn. Clariva works in a direct and targeted way to reduce the growth and feeding of soybean cyst nematode. While soybean cyst nematode is currently not an issue in Western Canada, it’s good for growers to know about the possibility of emerging pests and solutions for them.

“Clariva pn-treated soybean seeds will take current SCN management programs to the next level by reducing SCN feeding and reproduction,” explains Nathan Klages, seedcare and inoculants product lead with Syngenta Canada. “This is a targeted, direct and proven solution that will help growers increase yields under SCN pressure.”

“Up until now, they haven’t really had an opportunity to have control of that pest,” he continues. “They’ve had genetics within their soybeans that are bred in to try and control the soybean cyst nematode.”

Farmers using resistant varieties are still finding that most varieties don’t provide control for all types of soybean cyst nematode. The best solution should include a variety of tools, not just a seed treatment and resistant varieties. Specifically, Klages mentions the importance of an integrated pest management strategy, which includes smart rotation.

HOW DOES CLARIVA WORK?

The seed treatment uses P. nishizawae spores that work to infect and kill soybean cyst nematode. When treated seed is planted, the spores are released into the surrounding soil where they create a protective safe zone for the plant’s roots as they grow. As the plant grows, the protective zone not only kills soybean cyst nematode, but also prevents it from reproducing and feeding. Even their dead remains stay active in the soil. This has the added bonus of ensuring suppression throughout the season. Although Clariva does provide season-long protection in the root zone, if the roots grow outside of that root zone, SCN can still take hold.

“What we’re not saying is that it’s not going to give you subsequent years protection because moisture can dilute Clariva pn, so it won’t be enough for two years,” clarifies Klages.

Another bonus is that Clariva keeps working even under variable environmental conditions, including varying temperatures, moisture levels and soil pH.

Clariva works best when applied on varieties that are resistant to soybean cyst nematode. For growers looking for a nematicide and fungicide solution, Klages recommends Clariva pn with Vibrance Maxx. For growers looking for a nematicide and fungicide/insecticide solution, he recommends Clariva pn with Cruiser Maxx Vibrance beans.

Clariva has been registered in the U.S. for two years now with great success. It will be available all across Canada in 2016. Although the product is specifically targeted for southwestern Ontario where SCN has been on the rise in recent years, it will also be available in Western Canada, if there’s a need for it, said Klages.

“But it doesn’t seem that there’s a need for it now,” he said. However, Klages expects that it won’t be long before there’s a need for the product in Western Canada. “It’s not a question of if, but when it will show up.”
Perennial wheat more than pipedream

It’s still years from commercialization, but early perennial wheat research is promising

By Julienne Isaacs

Doug Cattani is working on a long-term investment that will pay dividends down the road.

The University of Manitoba plant sciences professor is currently in year five of a now much-publicized 15- to 20-year perennial wheatgrass breeding project. Perennial grain is something of a holy grail in plant breeding — a cereal crop that delivers high productivity while saving farmers soil health and increasing carbon sequestration.

Features

The vision is not so far from reality.

Perennial wheatgrass — 15- to 20-year perennial wheatgrass breeding project. Currently, Cattani’s program is evaluating the adaptation of intermediate perennial wheatgrass to Manitoba production environments. The team started in 2011 by planting thousands of individual wheatgrass cultivars sourced from the Land Institute in Kansas as well as from collections around the world. They immediately eliminated any grasses that could not overwinter in Manitoba or withstand the province’s unpredictable spring conditions. “Our main problem was not necessarily overwintering but beginning growth too early in the spring and getting hit with a hard frost — a similar problem for winter wheat,” says Cattani. It’s a slow process, but an essential one. The best contenders out of the first round of selection will have to be evaluated again in a second round of three consecutive harvests to ensure they retain productivity.

AGRONOMIC PERFORMANCE

Average yields of the first round of contenders are in the 1,200 kg/ha range (38.8 bushels per acre), although figures are approximate as the researchers must extrapolate individual plant yields to a crop basis. But Cattani says some of the best crosses will likely yield much higher.

In addition, most individual plants are relatively competitive with weeds once established. Disease-wise, the plants seem hardy, and have had no observable problems with leaf rust or stem rust. “We haven’t tested for it, but a group from Minnesota has found that many of the intermediate wheatgrasses they looked at have had moderate tolerance to fusarium head blight. We want to look at that as well,” he says. “That’s probably a strength of the wheatgrasses — they appear to have tolerances our other wheat varieties don’t have.”

In 2016, Cattani’s team will start looking at nutrient needs and evaluating some of the basic agronomy that will go into managing perennial wheat stands over time. The program is growing the wheatgrass under organic conditions with no added nutrients, but Cattani estimates that in a conventional system 50 kg of nitrogen per hectare (44.6 pounds per acre) will be required to keep the stand competitive and max out production.

It’ll be 10 to 15 years

The next step was evaluating how individual plants performed in terms of yield over a multi-year period. “We wanted to see whether, if a plant yielded well one year, it would be bad the next year,” he says. “We had to look at this, because if you sell it to a producer, and they get a good yield the first year and it’s a forage crop there after, they will not plant it again.”

Cattani’s team found that after the first year, many plants dropped off in yield in the second year and “tank[ed]” in the third year — 99 per cent of the material they’d started with. But the one per cent that remained included about 50 plants that were barely enough to withstand Manitoban winters and yielded well three years in a row. “We took the good ones and began the next step of the program, which is where we are now,” says Cattani.

Any breeding project takes years from genesis to commercialization, and Cattani’s project is right on schedule. Each of the 50 individuals — of which a promising 20 are under special scrutiny — will be evaluated both as individuals and to see how well they perform together.

“Perennial wheatgrass plants have to have pollen from a different genotype in order to set seed, so we have to evaluate how suit- able they are together,” explains Cattani. “We want to find ‘parents’ that will give a high yield, and then we’ll limit the number to eight to 10 to make a population going forward.”

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Andy Sirski reveals a few of his favourite market indicators for choosing stocks.

**10-DAY MOVING AVERAGE**

I answered right away that my favourite indicator was the 10-day moving average (10 dma) chart. This indicator has stood the test of time. Some members in my group worry that selling at the 10 dma can whipsaw an investor. My response is that it would get me to sell out near the top.

The members who did not use that signal for gold stocks in 2011 and oil stocks in 2014 and 2015 now admit that not selling has cost them money.

At stockcharts.com, using the free version, you can see the 10 dma for any stock. Look under the word “overlays,” and you should see a default setting for the 50 and 200 dma. To the right you should see the numbers 50 in one box and 200 for the other. Put your cursor into those boxes. Delete the 50 and type in 10, then on the other box delete the 200 and type in 20. Then click “update.”

Now, when you type in a stock symbol you should see charts for the 10 and 20 dma.

**PARABOLIC SAR**

I like the 10 dma as a sell-signal. For a buy signal I like the parabolic SAR (SAR stands for stop and reverse). On stockcharts.com, I set the parameters at 0.05,0.2. The parabolic SARs is one of the few indicators (overlays) that is either above or below the candlestick. As I looked at stocks where the daily price dropped through the 10 dma, pretty well every time the parabolic SAR jumped above the candlestick which is bearish. (A candlestick chart shows a stock’s high, low, opening and closing prices for each day.)

**UPS AND DOWNS**

I try to keep in mind that the easiest money to be made is when we catch a trend, up or down. One way to help us see an uptrend is when we see higher lows and lower highs.

The reverse is true for downtrends... lower lows and higher highs.

When we see lower and lower lows and lower and lower highs we will see more and more stocks drop through the 10 dma. I try not to fight that indicator. If you sell out with that indicator you will not face the losses that some investors have suffered in the past. I try to be quite simple when I think about it. Now we just have to do it.

We know that when stocks are in an uptrend, we can buy stocks and hope to collect some capital gain. This is what most in the industry go for. In reality, stocks go up about 27 per cent of the time, sideways 66 per cent of the time and down about seven per cent of the time.

These might change a bit from time to time but if you follow stocks long enough you will see that stocks go sideways most of the time.

From time to time the price will go up. And from time to time the price will drop. Unfortunately the price often drops much faster than it goes up.

**SELL COVERED CALLS**

In 2003 I learned about selling covered calls on stocks I own. Many do not see the potential of selling covered calls. The way I figure it, I can “rent” out my shares and bring in lots of cash during that 67 per cent of the time when stocks are flat. I can also sell calls when shares are dropping to drop my adjusted cost base.

I often fine-tune my strategy

I can sell calls when shares are going up and during that time I often will cap my gains. That turns some people off from selling covered calls — the calls pay less than just plain holding the shares. Many are so confident in their ability to choose good stocks that they don’t want to take a chance at limiting gains.

I look at in a different way. Very often I pick up one per cent or more by selling weekly covered calls. Most of my stocks are not buy and hold. They are “buy and rent.” The buyers of the calls have the option to buy, so really the strategy becomes buy and rent with option to buy.

I often fine-tune my strategy — if the shares are trending up I might not sell calls or I might sell calls above the price of the day so I capture some capital gain and collect cash from the premium.

In a flat market I can sell calls at the price of the day or a bit above. On a falling stock I might sell calls a bit below the price of the day so I do have some downside protection. If I think the selling is going to drive the price down a bit I often sell the shares.

Andy Sirski is mostly retired. He travels with his wife, plays with his grandchildren, has a small income from farming and manages his family’s investments. Andy also publishes an electronic newsletter called StocksTalk where he explains what he does with his investments, now and then. To read StocksTalk live for a month send an email to stockstalk@mts.net.

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On the importance of ag societies

Ag societies were intended to be a way for farmers to learn from each other.

I have a question about farming. I ask the Internet. If I have a question about raising chickens or goats or bees, I look up forums and read magazines on the topic. And there are some pretty misleading magazines out there (a magazine called Modern Farmer published an article exploring replacing tractors with draft horses).

These are not bad things. Not are they wrong (the draft horses idea aside). It’s good to be curious. But finding answers to questions in a vacuum doesn’t promote rural living to a potentially interested and formative audience.

Full disclosure: I sit on the Stanley Ag Society board — this happened only a week or two after I discovered they exist. It’s been eye-opening. Something exciting sits at the Stanley Ag Society. It’s opportunity. I think. It’s promise. It’s new to me, so to hear someone passionate about 4-H programs, agriculture, and country living, in general, stand up at a meeting and say (I’m paraphrasing), “this is an exciting time for us. Ag societies were intended to teach people how to live in the country, and more and more people, I find, don’t know the first thing about doing so. This is a great time to be what ag societies were intended to be.”

If I knew about ag societies, I assumed they were for kids who love horses and cattle. This is not the case. And if it is, it’s only because that’s what a specific society’s catchment area has let it become.

According to Manitoba’s ag society charter, “The objects of a society are to encourage improvement in agriculture, food production, and rural living. To provide leadership in sustaining the social structure of rural communities, including, but not limited to, maintaining educational opportunities and traditional activities in communities.”

This inspired me. To learn about all the elements of country living from people who have been doing it and loving it for years and generations. To spend time with people who care enough about animal husbandry that they’ll volunteer their time to make sure a younger generation develops the skills and appreciation they were taught.

I agree with the gentleman who spoke out at our meeting. More and more people, city dwellers, too, are interested in ag practices, especially as they relate to sustainability, the proper care of livestock, and generational wisdom. These topics fall under the purview of every agricultural society in Canada. But these groups, and there are so many, are dwindling.

Keep them going. Strengthen them. Refresh them with new ideas, and stir these sometimes stagnant, dwindling groups into the bastions of country wisdom they could be.

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

Columns

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Water chemistry: the Coles notes

Measure your water in the field before you use it in the house, the field or the barn

By Les Henry

This piece is all about encouraging the energetic young folk that are advising farmers to measure it in the field when a water question comes up. There are many additives for spray water on the market but check the water source first. A change of water may be the best and cheapest route.

Water chemistry can be a daunting subject but in the Coles Notes version it can be quite simple. The important “stuff” for agricultural needs can be measured in the field. Water in the spray tank, domestic use, livestock use and irrigation are the big reasons we need to know what is in our water.

WATER CHEMISTRY: THE COLES NOTES

The major things dissolved in water are:

1. Positively Charged:
   - Calcium (Ca²⁺)
   - Magnesium (Mg²⁺)
   - Sodium (Na⁺)

2. Negatively Charged:
   - Sulphate (SO₄²⁻)
   - Bicarbonate (HCO₃⁻)
   - Chloride (Cl⁻)

Total dissolved solids (TDS): TDS is the sum of all the things dissolved in a particular water and can be expressed as parts per million (ppm). The chemically correct unit for TDS is mg/l (milligrams per litre) but for waters we use ppm. It’s easily understood.

But, for most waters we use, a very good first approximation of TDS can be made by measuring the amount of electricity that a water will conduct. This measurement, Electrical Conductivity (EC), is sometimes referred to as Specific Conductance. The EC is a temperature-dependent measurement, all data is corrected to 25°C.

MEASURING WATER IN THE FIELD

EC is measured in units of microsiemens/cm (µS/cm). For reference points:

- Mountain-fed rivers (for example the Saskatchewan River) measure about 400 µS/cm.
- Sand point wells measure about 500 to 1,000 µS/cm.
- Most farm wells measure between 1,500 and 3,000 µS/cm.

The Saskatchewan government website www.saskحو. ca is a good reference. It has data for all Saskatchewan cities and towns. This website uses Specific Conductance as a term for EC. When reading a water meter, look at the water given few clues. Very nice clean looking water can be loaded with hard water salts that really take the edge of off glyphosate herbicides. And, do not assume that the water stays the same it can change drastically with changing conditions.

I use the EC meter shown in the briefcase in the photo. The briefcase also holds a notebook for recording results and a kit to measure hardness. This unit has 50 feet of cord that can be thrown in rivers or sloughs, over a bridge or wherever. It is very rugged and dependable. It set me back about $900 many years ago.

Many EC meters measure pH also but pH measurements are not always needed. For certain herbicides pH can be very important so do read the label details about the individual herbicides.

WATER HARDNESS

Water hardness can be easily measured in the field using a Hach hardness kit — usually available at businesses that supply water well drillers with pipe, pumps etc.

Hardness is determined by the amount of calcium plus magnesium that are in a sample, expressed as parts per million. It is a complicated equation but the kit takes care of that. Some kits express hardness in an old unit (grains per gallon). This measurement is still in use because water well drillers still use it.

With a knowledge of EC and Hardness we have 90 per cent of what we need to know about a water. Chapters 8 and 9 of Henry’s Handbook of Soil and Water have reference data for both surface and ground water for all three Prairie provinces.

For more information on water issues associated with herbicide spray, see provincial agricultural websites.

RULcE OF THUMB

Water quickly picks up minerals as it passes through or over soil materials. For water that comes from glacial soil materials the hardness in ppm is about 0.5 x the EC. Waters that have passed through pre-glacial (bedrock) deposits are much softer.

As a general rule, Alberta well waters are much softer because many of them are completed in bedrock formations. The depth of glacial material is much less in Alberta than in Saskatchewan and Manitoba.

QUALITY CONTROL

If you are doing water measurements in the field, it is important to check the results against a lab on a regular basis. I use Saskatoon tap water as a standard and check with City of Saskatoon staff to see what they are putting in the lines. 

J.L.(Les) Henry is a former professor and extension specialist at the University of Saskatchewan. He farms at Stardum, Sask. He recently finished a second printing of the text Handbook of Soil and Water: a book that traces the basics and practical aspects of soil, fertilizer and farming. Les will cover the shipping and GST for “Grainews” readers. Simply mail a cheque to Dr. Henry at:

29-206 10th Ave., Saskatoon, Sask. S7K 3H7, and he will dispatch a signed book.

Left: This is a Hach Hardness kit. It’s simple to use. Top: This briefcase has the EC meter, notebook for recording results and the kit to also measure hardness. I keep myself honest by checking Saskatoon tap water at home regularly.
Fuel your tank — one way or another

Will medical marijuana be enough to ease Lee Hart’s modern day stress?

BY LEE HART

O ne mission I am on this week is to get a prescription for medical marijuana so I can better cope with this struggling economy, or maybe I am worried about the terrorist threat that comes with allowing immigrants into Canada, or, man, have you seen the price of celery lately? … I don’t even want to go there. I am sure I can find something to raise my stress level enough to justify a prescription.

Without railing on the parade of any “cropping” operation, I was a bit surprised at recent business news reports about Loblaw’s Super Store, No Frills, etc. considering getting licensed to sell medical marijuana in its network of 1,200 pharmacies (including Shoppers Drug Mart) across Canada.

The first question that came to mind is “how big a market is there for medical marijuana?” I was thinking there are a handful of special medical conditions in the country that can really benefit from smoking a joint. I guess I was wrong.

I knew one person years ago with a chronic, progressive and debilitating muscular atrophy disease and the only way they could deal with pain and relax their muscles was to smoke a joint. But that was in the days before medical marijuana, so for them finding comfort was an illegal operation.

I am not opposed to anyone using medical marijuana if it helps treat a valid medical condition. I had visions of anyone “having a bad day” lining up for a prescription, but I have learned it can be a necessary medication for side effects related to cancer treatments, help with pain control and ease muscle disorders. So far I haven’t seen it recommended as a stress relief medication.

But Canada’s new federal government appears intent on filling that aid-to-daily-living void, of any “cropping” operation, I was thinking that “this can do no harm.”

I don’t believe that legalized recreational pot use is any worse than the existing and seemingly ever increasing access to taverns and liquor stores. (From the fact file, annual per capita consumption last year of Canadian and imported beer was 63.35 litres per person based on total population, and since I don’t drink, obviously somebody got 126.7 litres.)

Legalizing marijuana may get a few dealers off the street but on the other end of the scale its not going to take any pressure off overcrowded battered-women shelters, backlogged court rooms, full jail cells, and long wait times at alcohol detox and treatment centres. Hopefully as government revenues increase from another new sin tax, they heavily reinvest in repairing the damaged society it causes.

An on my soap box message.

TIME TO BUY A GAS GUZLER

And from the “boy I am getting old” file, does anyone else remember the panic over oil shortages from last month. Oh, wait … that was the 1970s — it just seems like it was last month.

As I recently pulled into an Edmonton gas station where regular gas was selling for 57 cents and the radio news reported the on-going world oil glut, and a crumbling Canadian economy as thousands more workers were laid off, I had to think “what ever happened to the-world-is-ending oil shortage?” albeit it was a few years ago now.

But there was panic in the early 70s. People were lining up for miles at gas stations to refill their tanks. The world was running out of oil. Did switching to those economical four-cylinder Japanese cars really fix the problem? The oil crisis of the 1970s was related more to the fact that Saudia Arabia flexed its muscle and turned off the oil tap supplying U.S. markets. But it caused a great panic over energy supplies, energy self-sufficiency, conservation measures, and more.

Fast forward a few decades and here we are again with Saudia Arabia (OPEC), flexing its muscles, this time with the message: “We’re going to keep producing the oil, regardless of how low the price gets.” And I thought it was rich for Iran to declare it was keeping the world’s crane cranked up as well. That country was dying under years of international trade sanctions imposed because of its aggressive nuclear policy. The U.S. agreed to lift sanctions a few weeks ago, Iran put away the bombs and cranks up its oil factory and says, “Thanks, world, now we too will add 500 million barrels a day to the oil glut!” That’s a great sign of gratitude.

As a consumer it’s great. I love 60 and 70 cent gasoline prices. Unfortunately it also means the price of celery isn’t really a hardship. The oil crisis of the 1970s was related more to the fact that Saudia Arabia flexed its muscle and turned off the oil tap supplying U.S. markets. But it caused a great panic over energy supplies, energy self-sufficiency, conservation measures, and more.

And now with all these Syrian immigrants coming to Canada, how safe can I possibly be? To be honest watching the news reports of their bombéd cities and homes, and the squallor of their refugee camps, and I realize that me coping with the high price of celery isn’t really a hardship. I’m glad Canada can offer refuge to some.

And when you look at world leaders the likes of Syrian president Bashar Hafez al-Assad, or potential leaders like Donald Trump, that young Mr. Trudeau doesn’t look like too bad a fellow. I’m in a pretty good place. And that is just GOing the one way or another. That is my soap box message.

SMALL

EARLY

LATE

Just GO
Transition: two children, one farm
Sam and Ursula want to pass the farm to their son, but share the wealth with their daughter

BY ANDREW ALLENTUCK

A farmer we’ll call Sam, 62, and his wife Ursula, 59, farm 10 quarters of grain in central Saskatchewan. Helped by their son, Ernie, and his wife, Maria, both 35, they have developed a very successful operation. The farm generates an average of $175,000 a year and the couple operates equipment for roadwork, snow plowing and other tasks for another $125,000 a year. The combined businesses gross $300,000 a year after expenses. The problem? Transferring the business to Ernie and transferring money to a daughter who works off-farm.

The farm as now organized is both an agricultural enterprise and, through the heavy equipment business, an industrial undertaking. It has substantial value with farmland estimated to have a value of $1 million, farm equipment valuing $750,000 and their heavy equipment with a value of $1.2 million. They have cash in the bank of $200,000. They have a choice of extending the farming business or letting Ernie buy them out so that they can retire.

Furthermore, they have kept their income down by taking available capital cost allowance on the equipment and deducting interest paid for past land purchases. With the success of their two lines of business, they have eliminated all debt. The farm and its heavy equipment operation are relatively simple jewels that spin out money. They want to make preparations to leave some of their wealth to their daughter — we’ll call her Rose — who is a health care professional in another province. Rose has a family with two young children. Their choices are essentially whether to take money out of their businesses for family financial planning or to leave the money in the businesses for future growth.
Columns

Sam and Ursula contacted financial planner Rod Tyler, head of the Tyler Group in Regina, to review and evaluate their choices. Tyler says that squeezing cash out of the businesses above usual salaries would reduce its financial strength. There are other ways to look after Ernie and Rose.

Evaluating the Choices

The choices which need to be evaluated are whether to keep money in the business for growth or to take it out for family uses and retirement. And those choices in turn need to be evaluated in terms of tax consequences.

Retirement is not far away for Sam and Ursula, so they need to make decisions and preparations. At present, they have unused RRSP room of $195,000 (for Sam) and $85,000 for Ursula. Neither has a Tax-Free Savings Account. Sam and Ursula think they could live on $6,000 a month after tax when retired. Their home is paid for and their only expenses would be utilities and the customary expenses of living. That means getting from present to retirement in the future.

If Sam and Ursula want to sell the operation to Ernie, they can each use half the capital gains exemption which was moved up from $813,600 to $1 million for qualified farming and fishing property for dispositions after April 2015. The enhanced deduction is for individuals and applies to tax years after 2015. The $1 million they can get for the farm will not be taxed.

A legacy for their daughter, Rose, and her two children, nine-year-old twins, can be achieved via Registered Education Savings Plans and life insurance. Neither child has an RRSP. If Sam and Ursula take over the job of funding the children’s educations, they could contribute $2,500 per child per year and capture the Canada Education Savings Grant of the lesser of $500 or 20 per cent of contributions in each calendar year. They can also catch up with certain restrictions, among them, a lifetime limit of $50,000 per beneficiary and $7,200 CSEG per child.

In addition, Sam and Ursula could buy life insurance with Rose and Ernie as beneficiaries. It would be a bequest and make it possible to give them money without having to sell any of the farm. If they go this route, Sam would pay $990 a year for $200,000 of term coverage for 10 years and Ursula $510 a year for the same coverage. If they go to 20-year terms, the costs would be $3,200 a year for Sam and $1,008 a year for Ursula. Benefits could be adjusted so that Rose would have a large share to compensate for eventual transfer of the farm to Ernie. As Ernie works to pay off the buyout loans, his share could decline in favour of Rose — or as the parents prefer. Changing beneficiaries would be easy, though the parents should take accounting advice in each change.

If Sam and Ursula contribute $5,000 per year for each of the next eight years and achieve three per cent growth after inflation, the RRSP would have $100,750. Evenly divided, each child would have $10,037.50 for post-secondary educational expenses. That would pay for tuition at any university or college in Saskatchewan. The kids could supplement their incomes with summer jobs.

The Farm Transfer

Transferring the farm to their son Ernie could be done with a series of planned sales. He could borrow funds needed to pay his parents at the low interest rates currently prevailing. Rates are likely to rise in the coming decade, but secured loan costs should remain below historical trends. The workout of value and transfer to Ernie would be set for 10 years. If Sam and Ursula sell 60% of their land for 10 years, he would own the farm. Sam and Ursula would have $1 million in their savings or investment accounts. They could allocate money to their RRSPs in years in which their marginal rate is 40 per cent or more, which, in Saskatchewan, means individual pre-tax income of $45,000 or more.

The money could go to filling their RRSP space and, when that is completed, they could use TFAs to a 2015 maximum of $46,500. If they build up RRSPs with $10,000 each for the next three years and obtain a three per cent return after inflation, the RRSPs, which have a current value of $155,000, would be worth $233,000.

The TFAs, filled to $46,500 each with cash from their $200,000 bank balance and enhanced at a rate of 5.50 per cent per year for three years, would have a balance of $35,000. We’ll let remaining cash balances of $107,000 be used for farm working capital. The combined RRSP and TFA accounts would include both TFAs and RRSP balances in three years’ time, the couple would have $268,000. That sum, if paid out as annuity so that all capital and income is distributed in the 30 years from Sam’s age 65 to Ursula’s age 95 would produce $12,600 a year. They could add $100,000 a year from the land sale to Ernie for 10 years. CPP of an estimated $12,000 a year for each of them, and two Old Age Security benefits at the 2016 rate of $6,846 a year for total income of $154,300. After estimated 25 per cent average income tax, the couple would have $9,400 a month to spend. They could save $10,000 a year to build a fund for the time that the $100,000 buyout from Ernie ends.

Farming equipment could be willied to Ernie. Its cost base would depreciate over time so that the deemed disposition which occurs at death would not be a large cost to the estate. Any taxes due on transfer of the farm or equipment over the lifetime capital gains exemption could be covered by term life insurance, Tyler notes.


Income during the Buyout

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<th>SOURCE</th>
<th>INCOME</th>
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<tr>
<td>TFSA and RRSP annuity</td>
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<td>Land sale to their son</td>
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<td>CPP ($12,000 each)</td>
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<td>Old Age Security ($6,846 each)</td>
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<tr>
<td>MONTHLY INCOME</td>
<td>$9,393</td>
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</tbody>
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During the 10-year buyout of the farm, Sam and Ursula would have an annual income of almost $150,300.

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Using AgExpert’s enterprise feature

Setting up and managing “enterprises” for better management information on your farm

AgExpert Analyst allows you to break your farm into separate “enterprises,” so you can manage and analyze specific profit sectors within your operation.

For example, if you have a livestock and grain operation, you can set up a grain enterprise and a cattle enterprise. If you produce strictly crops, then you may want to create three separate enterprises — one each for grains, oilseeds and pulses. Other common enterprises include dairy or trucking. Enterprises are completely customizable to your operation.

Once you create enterprises, you can track income and expenses for each enterprise by establishing an “enterprise split” in the chart of accounts. You can use reports and management tools to compare the profitability of each enterprise, and help make important decisions for your farm. This could include deciding whether or not to invest in more cattle to complement your grain enterprise, or reviewing budgets for your grain and oilseed enterprises to plan for the most profitable combination of canola, wheat and barley acreage.

**SETTING UP ENTERPRISES**

Follow these steps to set up your enterprises.

1. Setup > Preferences > Optional Features > Make sure Enterprises box is checked > Save.
2. Setup > Enterprises. This is where you can customize the name of the enterprises to suit your operation. You can add a new enterprise, edit or delete an existing enterprise, or merge two existing enterprises together.
3. If you choose to merge two enterprises, any percentage splits that you’ve allocated to those enterprises in the income and expense accounts, will also be merged.

**SET UP EXPENSE SPLITS**

Note, you can start to allocate income and expenses by enterprise:

1. Setup > Chart of Accounts.
2. Income Tab > Select an Income Account: Such as Hard Red Spring Wheat Sales.
3. Click Edit: On the right hand side, you’ll see the Enterprises box.
4. Select the appropriate enterprises for this income account. Then allocate a percentage to each enterprise. For example, 100 per cent of the Hard Red Spring Wheat income should be allocated to your “grains” enterprise.

If you need to remove an enterprise from the list, simply click to highlight it, then click on the red x to remove it. 

**Tip:** If you have a custom work income account, you could choose to allocate 20 per cent to grain enterprise and 50 per cent to cattle enterprise. However, percentages should be setup to appropriately reflect your operation and don’t need to equal 100 per cent.

5. Repeat these steps to set up enterprises for all income and expense accounts.
6. Expense Tab > Select an expense account, such as “fertilizer.” Then, for example, allocate a percentage split for fertilizer among grains, oilseeds and pulse enterprises.
7. Repeat steps to setup enterprises for all income accounts.
9. Reports > Report Console > Transaction/Account Information > Chart of Accounts > Select Category > Income and expense boxes > Table View: This will show you the Chart of Accounts Report. You will see your Enterprise Columns and be able to review the percentages you have allocated to your income and expense accounts.

**Tip:** Percentage splits can be changed and updated anytime by going back into the Setup and Chart of Accounts.

**REPORTS AND MANAGEMENT TOOLS**

1. Reports Console > Financial > Income/Expense Report: Explore various options within this report. Put a checkmark on “use enterprise split” *Select one or more enterprises to view an income/expense report based on your selection.* Or, compare: under Style: choose Summary or Detail, and under Type: Select Enterprise Comparison.
2. Management > Budget > Set the budget to look at the farm as a whole or by each enterprise or combination of enterprises, allowing you to compare actual to budgeted income and expenses.
3. Management > Operational Benchmarking > Production Unit Costing: This report will list a cost/acre or a cost/head from the information you’ve entered into the system. It can also report the total production cost by enterprise.
4. Management > Operational Benchmarking > Efficiency Measures shows the percentage of gross income that goes towards different expense categories and can be exported into Excel.

**Kelly Airey is a producer and ag consultant in western Manitoba. She offers software set up and training and discounts on software purchases. Contact Kelly at kelly.agconsulting@gmail.com or (204) 465-7776.**
Lower prices can bring lower moods

Farmers are resilient, but depression on the farm is no laughing matter

BY LISA GUENTHER

I

stead of blaming arthritis for your aching joints, you may want to point your finger at the economy — according to researchers.

"Overall, our findings reveal that it physically hurts to be economically insecure," Dr. Eileen Chou, a University of Virginia professor, led a team looking at links between economic insecurity and physical pain. The research, recently published in Psychology Science, is part of an ongoing report on farm stress.

Chou said in a press release. "Overall, our findings reveal that economically insecure farmers are more business-savvy than ever before, so perhaps more people can manage those debt levels."

Yet no one can control the weather, or the markets for that matter. A person can manage those risks a dozen different ways, but no one can eliminate them. Given all that, I wonder if Tylenol sales jump in small towns when canola prices drop.

There's a culture of stoicism in agriculture, which makes sense. You can't call in sick when you have to feed cows or harvest grain, after all. But rural residents face the same mental health challenges as city dwellers. Living in a rural area, after all, makes sense. Given all that, I wonder if Tylenol sales jump in small towns when canola prices drop.

In 1993, farmers had suffered several years of adverse markets, high input costs, and a generally unstable market situation. Right now, farm debt levels are high, but farmers had a few good years of crop prices. We're always hearing that today's farmer is more business-savvy than ever before, so perhaps more people can manage those debt levels.

And, as much as I dislike some of Sinclair Ross' writing, I have to admit he was right about one thing: Rural living can mean more physical isolation. For those of us who grew tired of hearing neighbours' arguements in our apartment building, this is not all bad. But it is bad if you're depressed and can hardly find the energy to make an appointment, let alone drive into town. But there are options. Many, if not all, health regions in Saskatchewan have psychologists, social workers and other therapists available. For people who don't want to drive into town, there are 1-800 numbers. In Saskatchewan, Mobile Crisis Services has a farm stress line, along with credit counseling and other services (see mobilecrisis.ca). Farmers or farm spouses who have off-farm jobs might also have employee assistance programs that provide all kinds of services to the employee and family.

At some point, we all run into big problems. We make bad decisions. Things happen to us that are outside of our control. It can be overwhelming.

But there are always ways to keep forging ahead. If you've reached a point where you can't see that, it's time to ask for help. 

Lisa Guenther is field editor for Grainews based at Livelong, Sask. Contact her at Lisa.Guenther@eaglechurch.com or on Twitter @LtoG.

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MARCH 15, 2016 grainews.ca / 29
Managing mustard fertilizer
Part 3 of this 4-part series on mustard agronomy covers mustard’s fertilizer needs

Ross McKenzie

PHOSPHORUS (P)

About 80 per cent of brown and dark brown soils are deficient in phosphorus (P). Soil P availability to plants can be assessed by soil sampling and testing to determine plant-available soil P. Research in Alberta has shown that the modified Kelowna soil test method, used by most western Canadian soil testing laboratories, is the best method to predict P fertilizer requirements. In Saskatchewan, the Olsen soil P test method has been the standard for soil test calibration. Crop response to applied P fertilizer depends on the quantity of plant-available P already in the soil as well as soil moisture and temperature conditions. When spring environmental soil conditions are cool and wet, mustard tends to be more responsive to P fertilizer versus when soil conditions are warmer or drier. Alberta research suggests that placement of P with the seed is potentially better than banded P, and both methods are superior to broadcast-incorporation of P fertilizer. But, from a seed safety standpoint, not more than 10 to 15 pounds of P/acre per acre should be seed-placed. Higher amounts should be side-banded away from the seed.

POTASSIUM (K)

Mustard has a high potassium (K) requirement. But only 20 per cent of the K taken up is contained in the seed, while the remaining K in the leaves and stems is normally returned to the soil. The majority of brown and dark brown soils in western Canadian prairie soils have extractable soil K levels in the range of 400 to over 800 lbs./ac. in the top zero to six inches. Generally, mustard does not respond to K fertilizer when soil test levels are greater than 250 lbs. K2O/ac. in the zero- to six-inch depth. On fields that test less than 250 lbs. K2O/ac. or on sandy soils or intensively cropped fields, K fertilizer may be required. Potassium fertilizer is more efficient when seed-placed or banded. However, even small amounts of seed-placed K fertilizer with mustard can reduce germination and emergence. If potassium is required, banding or side-banding is the best placement method.

SULPHUR (S)

Mustard requires a constant supply of available sulphate-S (SO4-S) throughout the growing season for maximum yield. Generally, sulphur deficiency is not common in the brown, dark brown and on irrigated soils as significant sulphate-S levels are usually present in the six- to 12- and 12- to 24-inch depths. But occasionally sulphate-S may be low in the zero- to six-inch depth. Surface soil deficient in S could have reduced yield without visual symptoms. The general recommendation for mustard production is five to 10 lbs./ac. actual S as ammonium sulphate in the brown and dark brown soil zones when surface soils are low in S.

Under irrigated conditions, there is normally sufficient SO4-S in the soil. Generally, there is adequate SO4-S in the irrigation water to meet crop requirements. For example, in 12 inches irrigation water in southern Alberta, about 30 lbs./ac. of sulphate-S is applied.

MIRONUTRIENTS

No documented micronutrient deficiencies have been identified with mustard in southern Alberta. I am not aware of any documented micronutrient problems with mustard in Saskatchewan. Occasionally, agronomists recommend boron (B) to fields based on a soil B test. But, the soil test for boron tends to be unreliable, resulting in unnecessary boron fertilizer application. If a grower receives recommendations for a micronutrient fertilizer on mustard, I would suggest field trials in replicated on-farm test strips to assess the potential benefits before using it on a field scale.

In the next issue of Grainews, I will discuss weed, insect and disease management of mustard.

Ross H. McKenzie, PhD, P.Ag., is a former agronomy research scientist. He conducted soil, crop and irrigation research with Alberta Agriculture for 38 years. He has also been an adjunct professor at the University of Lethbridge since 1993.

PHOSPHORUS RECOMMENDATIONS FOR MUSTARD

<table>
<thead>
<tr>
<th>SOIL TEST PHOSPHORUS</th>
<th>SOIL ZONES</th>
<th>IRRIGATION</th>
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</thead>
<tbody>
<tr>
<td>KELOWNA METHOD</td>
<td>OLSEN METHOD</td>
<td>BROWN</td>
</tr>
<tr>
<td>lbs. P/acre (0-6”)</td>
<td>lbs. P2O5/ac.</td>
<td></td>
</tr>
<tr>
<td>0-10</td>
<td>0-5</td>
<td>35</td>
</tr>
<tr>
<td>10-20</td>
<td>6-10</td>
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<tr>
<td>&gt;90</td>
<td>&gt;45</td>
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</table>

Source: adapted from Alberta Agriculture Agdex 14320-1

POTASSIUM RECOMMENDATIONS FOR MUSTARD

<table>
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<tr>
<th>SOIL POTASSIUM</th>
<th>SOIL ZONES</th>
<th>IRRIGATION</th>
</tr>
</thead>
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<tr>
<td>BROWN</td>
<td>DARK BROWN</td>
<td>P Zones</td>
</tr>
<tr>
<td>(0-6”)</td>
<td>(lbs. K2O/ac.)</td>
<td></td>
</tr>
<tr>
<td>0-50</td>
<td>90</td>
<td>100</td>
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</tr>
<tr>
<td>&gt;300</td>
<td>0</td>
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</tr>
</tbody>
</table>

Source: adapted from Alberta Agriculture Agdex 14320-1

These recommendations are based on using an ammonium acetate extraction moisture.

FIND MORE INFORMATION

While you’re waiting for final instalment in this series in the next issue of Grainews, you can find more information on mustard production online.


Believe it or not, there’s a simple trick to protecting your canola yield before sclerotinia even becomes a problem – and you don’t have to be a magician.

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For more information, visit cropscience.bayer.ca/Proline
Who’s selling the grain here?

This farm couple asks for another opinion about who should be marketing their grain.

During the winter conference season I had several conversations with farmers over coffee and lunches. One farm couple brought me into their discussion around who should be marketing grain on their farm: the “farmer” husband or the “bookkeeping” wife?

This couple has been married and farming for 15 plus years, with a couple of kids. They operate a mixed farm with about 2,200 acres and 100 cows. Both work full time on the farm.

My initial thought was that whatever I said, I would be the bad guy. This conversation had been going on for a while, and it looked like they were asking me to be the judge. After 35 years of marriage I am smart enough to know that this is not a position I wanted to be in! I avoided answering the question directly by bouncing questions back at them.

First, I asked if they knew their total costs of production on their farm. They both answered yes. I asked if they knew their costs for each crop. He said he could come up with those numbers fairly quickly and proceeded to pull out his trusty pocket book with all of his information from seeding, fertilizing, spraying and harvesting, field by field, for the past two years.

His wife replied, “I can tell you what our costs were last year because I have that in the computer. But I don’t have an update for this year because he,” she pointed at her husband, “hasn’t finished deciphering his note book and given me the numbers.” I wasn’t sure I should go any further, but since that accusation of tardiness seemed to pass right by him, I figured it was safe to ask more questions.

So I asked, “Have you done any analysis to see what you need for a yield or price to break even?” He said he had a pretty good idea, but he’d never sat down to pencil it out. She that ‘she’d reviewed last year’s numbers, but she hadn’t thought about doing it for the coming year.’ We talked about how knowing break-even numbers can help you to stay focused when it comes to marketing.

Next I threw in an easy question. “Who pays the bills and knows when the payments are due?” They both answered that he has some idea when payments are due, but no clue as to when the bills are due. She was in charge of that.

Next question: “How and when do you gather grain market information?” He told me he has some idea when payments are due, but he’d never sat down to price broadcasts on the radio, getting pricing texts from a couple of local grain buyers, accesses pricing information on the Alberta Ag and Alberta Wheat Commission websites and goes to seminars. She said she listens to price broadcasts and attends seminars, but other than that she leaves it up to him — for now.

I asked him what time of the day he usually did his research. He said that when he’s on the radio, or whenever he gets a text. He said he checked information on the computer at night.

I asked to see his cell phone. He pulled out the classic Samsung flip phone, as I’d suspected from the bulge in his shirt pocket. She had a Samsung Galaxy smartphone. His said he didn’t like all of the gadgets and buzzing and beeping. She just rolled her eyes.

After having grilled them both for about 10 minutes I felt bold enough to step forward with suggestions.

A third opinion is not a bad thing

On a family farm there are so many chores and jobs to be done daily that important jobs like following the markets often get left to “when I have time.” Texts and radio broadcasts are fine but, if you aren’t looking at the information until after the markets and the elevators close, you’re losing the opportunity to react to changing conditions. Yesterday’s prices may be gone by morning.

To be more responsive, you need to follow prices constantly. The best way is by fax and email. He should upgrade his phone; she should sign up to receive the same texts and emails he gets.

Next, I suggested they sit down and together enter the information from his pocket book into the computer. Then they could analyze the numbers and start getting together a marketing plan.

I suggested they make joint marketing decisions by talking about when they need to sell and at what price to meet their cash-flow needs. If he’s busy in the field, with two of them watching the markets, they won’t miss opportunities. If she really starts to enjoy marketing, he can focus on production, knowing their marketing plan is in good hands.

He figured this sounded like a good plan, so he was willing to sit down with his book and reveal many secrets. I wished them good luck and as they left she said, “thank you, he needs to hear it from someone other than me.”

Getting a third opinion is not a bad thing, but on a family farm don’t forget that the person with the second opinion is just as invested in this business as you are!

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.procommarketinglight.com).

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MARCH 15, 2016

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AGRI-TREND

Glacier FarmMedia
How it works: the differential

We look at the basic operating principle behind differential axle drives

Getting engine power to the ground in a vehicle or farm machine usually means routing torque from the engine flywheel through the transmission, then turning it 90 degrees to spin an axle connected to the wheels. Simple bevel-cut gears allow for that change in direction, but there is another problem that has to be overcome: unless the machine always drives in a perfectly straight line, there are times when a driven wheel on one side of the axle has to travel a longer or shorter distance than the other.

Here’s why. As a machine goes around a curve or makes a turn, the wheel on the outside travels farther, because it’s following an arc with a larger radius than its partner on the inside of the turn. To cover the extra distance in the same amount of time, that wheel has to travel faster than its partner, even though the machine’s overall speed remains constant. At the same time, the wheel on the inside has to slow down an equal amount. If power flowed to both wheels at the same rate, each one would have to skid on the road surface to allow the machine to turn, making steering control difficult or impossible.

The job of the differential, therefore, is to allow engine power to flow continuously to the drive axle, keep the vehicle travelling at a constant rate but still allow the two wheels to vary their rate of rotation. And it has to permit the difference in actual wheel speeds to be constantly variable as the trip continues.

The easiest way to understand how a differential does that is to first talk about what each component inside it does. The differential is located in the centre of the axle housing — or machine chassis. The wheels on each side of the machine are attached to individual axle shafts that fit into a part called a differential case, which turns inside the axle housing. The wheels on the inside of the turn begin to skid on the road surface, causing the axle on the inside of the curve to have more resistance, it begins to turn slower than the axle on the outer side. This causes the pinion gears to “walk” (turn) on their shaft and increase the drive speed delivered to the outer axle shaft (and wheel) in an amount equal to the speed decrease of the inner axle. The machine’s overall speed remains constant while one wheel speeds up and the other slows down.

The trouble with differentials is they always allow power to flow to the axle shaft offering the least resistance, which can cause trouble in poor traction conditions. For example, if one wheel is on ice and the other is on good traction, drive power will likely be directed to the wheel on ice because it has less resistance to torque. To overcome that defect, limited slip or “Posi-traction” differentials, which use clutch packs to limit rotational variation between the two axle shafts, are used. Of course many farm machines, particularly tractors, are available with manual differential lock which forces even torque distribution to both axles. But that’s a topic for another issue.

By Scott Garvey

Scott Garvey is machinery editor for Grainews. Contact him at Scott.Garvey@fbcpublishing.com.
New UTVs from John Deere and Can-Am
Two brands increase their side-by-side offerings for 2016

BY SCOTT GARVEY

In January John Deere added another model to its Gator line of utility vehicles. The XUV590i is described as a “crossover” that can get you down the road at 72 km/h and also haul or tow a reasonable load.

Under the hood, or more accurately, under the seat is a 586 cc, 32 horsepower, liquid-cooled inline twin-cylinder gasoline engine. That gives the XUV590i model a respectable load capacity of 363 kilograms (800 pounds) and a trailer tow rating of 499 kilograms (1,100 pounds). The larger four-seater XUV590i S4 has a 544 kilogram (1,200 pound) load rating and tows the same 499 kilograms (1,100 pounds).

The four-seater version loses about an inch of ground clearance, clearing 9.3 inches (23.6 centimetres).

Deere says 75 attachments can be mated to the Gators or additional lighting packages added. The XUV590i models come with an 875 Watt, 65 amp alternator. The new Gators use an isolated driveline along with sound-deadening material. The engine drinks from a 7.4 U.S. gallon (28 litre) fuel tank.

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

The new Can-Am Defenders are available in four models.

CAN-AM

At its dealer convention in September, BRP added a workhorse-style side-by-side to its Can-Am product line. The new Can-Am Defender Series offers four models, but none with four-seater configurations.

BRP claims it re-engineered its Rotax engine specifically for the Defenders in order to improve their torque and ability to work hard, rather than just go fast like BRP’s customers want to do in its other products. The HD8 and HD10 V-twin engines produce 50 and 72 horsepower respectively. BRP claims the HD engines produce 20 per cent more torque than competitors’ engines and do it at lower r.p.m.

To help deliver that torque, the Pro-Torq CVT transmission includes a low gear option. And the drivetrain has the brand’s 4-mode Traction System, including rear differential lock.

Defenders have a pretty significant 1,500 pound (682 kilogram) payload rating (up to 1,000 pounds, or 454 kilograms in the cargo bed) and trailer towing hits a whopping 2,000 pounds (909 kilograms). They can haul that across some uneven terrain with 11 inches (28 centimetres) of underbody clearance and 10 inches (25.4 centimetres) of suspension travel.

And when it comes to options, it’s even possible to get a Defender fitted with rubber-belt track systems on all four corners.

For 2016, BRP is offering a promotional 36-month limited warranty on Defenders.

Scott Garvey is machinery editor for Grainews.
Two new Tempo planters
Swedish brand Vaderstad adds new models to its high-speed planter line

BY SCOTT GARVEY

With its purchase of Saskatchewan-based Seed Hawk a couple of years ago, Swedish implement manufacturer Vaderstad has made no secret of its intention to become a major player in the North American market. In November at Agritechnica in Germany the brand launched two additions to its line of Tempo high speed planters, which are capable of working in the field at up to 15 km/h.

When its ready for delivery in 2017, the Tempo L will stretch the Tempo planter line into the 12- to 16-row range with a working width of 12.2 metres (40 feet). It can also be equipped with a 141 bushel fertilizer hopper mounted on the front of the frame. The hopper’s low, two metre height is designed to make filling less difficult. The planter can fold down to a three metre width.

Like the Icon system used on Vaderstad’s Seed Hawk brand air drills, Tempo planters use an iPad for implement control too. But the Tempo system is called E-Control. It allows for electronic management of all the drill functions, including individual row unit shut down.

The second new addition to the Tempo line is the three-point hitch mounted Tempo V. It’s available in seven different models with working widths from 4.2 to 6.6 metres (14 to 21 feet). The largest version comes as a 12-row, or as an eight-row with 30-inch row spacings. But the brand’s “Powershoot” maintenance-free row units can be moved to almost any position along the planter frame, allowing the Tempo V to handle just about any row spacing a buyer wants, which gives it the ability to plant a broader range of crop types.

Beginning with the 2016 model year, Tempo planters will use an aluminum-bodied metre that replaces the previous composite material construction. It also gets a new hatch, designed to make clean outs easier. The new metre design is capable of handling an even broader range of seed sizes. The Tempo V is available now. The Tempo L won’t be ready for delivery until spring 2017.

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

Walking through a display of classic European farm equipment feels a lot different than checking out more familiar, old North American machines. The evolution of equipment on that continent, particularly tractors, was a bit different than what we experienced. Much of that was due to the influence of the World Wars and the smaller holdings more typical on that side of the Atlantic. And many of the companies that were players in that market through the last century are unfamiliar to us.

At the Agritechnica machinery show in Hanover, Germany in November, one of the more eye-catching European classic tractors on display was this F1L 514 Deutz half track from 1951. This was Deutz’s first model to sport an air-cooled engine.

†

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

Steel wheels a ‘new’ invention
Special steel wheels for skid steers a lower cost alternative than tracks

BY SCOTT GARVEY

One of the new products on display at Manitoba Ag Days in Brandon in January was Winnipeg-based Evolution Wheel’s all-steel wheels for skid steer loaders. At first glance they might evoke memories of old steel wheel tractors, but they’ve been developed to meet a very modern purpose, says Derek Hird owner of Evolution Wheel.

There are now several models of rubber-tracked skid steer loaders on the market which offer significant traction and floatation improvements over wheeled machines, but they come with a much hether price tag. Hird says his steel wheels are an excellent — and lower cost — alternative to buying a tracked machine. They can be a big help around the farm, because they solve many of those traction problems producers experience with wheeled machines.

“Manure cleaning is a big one,” Hird says. “In the snow they do pretty well, also working in the mud. A lot of guys in the market have trended toward a track machine to solve the 20 per cent of jobs they couldn’t do with tires. Now they have this option that’s a third less cost for an upgrade and virtually no maintenance costs versus high maintenance costs down the road for a track machine.”

The steel wheels simply bolt onto hubs the same as an ordinary tire and rim. They also offer a 60-40 offset design so they can be mounted two ways, one to narrow up the loader’s track width or reversed to gain more clearance between the wheel and loader body.

“The nice part about the wheels is they’re easy to take on and off, two guys, 20 minutes and you have your tires back on again,” says Hird. They’re the same size as a 12 x 16.5 tire, except we’re a little bit wider to get some extra floatation.”

Because of their all-steel design, tire punctures won’t be a problem.

Because of their all-steel design, tire punctures won’t be a problem. A complete set of four retails for $6,000. Check out the company’s website www.evolutionwheel.com, for more information and to find a list of dealers.

†

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

Half-track Deutz on display
A rare classic at Agritechnica

BY SCOTT GARVEY

Walking through a display of classic European farm equipment feels a lot different than checking out more familiar, old North American machines. The evolution of equipment on that continent, particularly tractors, was a bit different than what we experienced. Much of that was due to the influence of the World Wars and the smaller holdings more typical on that side of the Atlantic. And many of the companies that were players in that market through the last century are unfamiliar to us.

At the Agritechnica machinery show in Hanover, Germany in November, one of the more eye-catching European classic tractors on display was this F1L 514 Deutz half track from 1951. This was Deutz’s first model to sport an air-cooled engine.

Hardly a powerhouse with its 1330 cc diesel engine cranking out only 15 horsepower when tested at the DLG test facility (Germany’s equivalent of the Nebraska Tractor Test Lab), the little tractor has three forward gears and one reverse.

†

Scott Garvey is machinery editor for Grainews. Contact him at Scott.Garvey@fbcpublishing.com.
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Germans have used the UNIMOG and Mercedes-Benz in the field for decades. Photo: Scott Garvey

German farmers and contractors find uses for a hybrid truck-tractor

By Scott Garvey

Germany is the birthplace of the Mercedes-Benz Unimog, an ultra-capable, four-wheel drive vehicle that was designed to be equally as much a truck as a tractor. After the end of the Second World War, German farmers, short on cash, needed both tractors to work their fields and a truck to haul their produce and get them to the local village. The Unimog was the combined answer to both those two needs.

Today, other German companies are pushing that concept to another level. Paul is one of the brands offering high-horsepower hybrid vehicles to the ag sector with its Agro Mover Spezialfahrzeuge (Specialized vehicles), billing them in its corporate brochures as “a powerful and versatile alternative to tractors.”

Paul takes a variety of regular Mercedes over-the-road trucks and performs extensive modifications to them to meet the needs of different industries. A 480 horsepower Mercedes gets converted into the model specifically intended for farmers, the Agro Mover. These four-wheel drive trucks get any of a variety of special ag tires to meet whatever needs a customer has. The idea is to make these trucks powerful machines as capable of hauling or running machinery in the field as on the road, spec’ing them out exactly to do whatever jobs a customer wants.

“We do a lot of applications for agriculture, so each truck is different,” said Christian Huber, who was manning the company’s display at Agritechnica in Germany in November. “We do it customized for the customer.”

Inside the cab is a joystick controller at the operators right arm. Beside that is an ISOBUS-compatible virtual terminal capable of handling input from any standard ag implement. It’s easy to imagine this machine running a round baler through a field.

“We can add whatever is necessary, even a PTO at the rear as you see here,” added Huber, as we walked around the truck at the centre of Paul’s Agritechnica display. “It has an ISOBUS system. It has a load-sensing hydraulic system.”

An added advantage of using a truck chassis is it can achieve road speeds no tractor can match. “It can go up to 80 km/h,” adds Huber. “It depends on the tires.”

According to the company, the on-road-off-road capability and high speed makes these trucks popular with custom sluge operators, among others. Added to that appeal is its competitive cost compared to high-horsepower tractors with 50 km/h transmissions.

“It starts at 120,000 up to 180,000 euros (C$180,000 to C$270,000),” explains Huber. “It depends on the kits and the configuration you choose.”

In a cab-over configuration, the truck has a short wheelbase, making it pretty manoeuvrable.

Huber says the company can export an Agro Mover anywhere a customer wants one. “We can do it for Canada,” he says.

The company’s website is www.paul-nutzfahrzeuge.de.

Photos: Scott Garvey

1. German company Paul creates the Agro Mover by taking an off-the-shelf 480 horsepower Mercedes over-the-road truck and giving it systems typically found on an ag tractor.

2. Inside the cab, the Agro Mover controls look more like something you’d expect to find in a tractor than a truck.

3. Hydraulics and a rear PTO are common equipment on a Agro Mover.

4. Paul will kit out these machines with any of a variety of special-duty tires.

5. Paul’s factory will customize a truck with whatever features a customer wants, and it will even ship them to Canada.
AI study produced higher beef profits
Bringing an AI technician onto the farm may make more economic sense than buying more bulls

BY LEE HART

While there will always be a role for breeding bulls on the farm, a recent Saskatchewan study shows producers may want to look at artificial insemination of commercial beef cows, which could put more calves lower on the ground.

In the report published late last year by the Western Beef Development Centre (WBDC) at the Treniunde Research Ranch near Lanigan, lead researcher Bart Lardner compared two 40-head herds of similar Black Angus cows in AI and natural breeding programs. The AI group netted $11,000 more over the natural service group with more calves weaned, more pounds of beef produced and savings of about $275 per head.

Lardner says there are a couple of qualifiers—it was only one year, and it may not be suitable for every farm, “but considering what it is and how many producers may have bulls, AI service may be something for producers to consider.”

He says the value of AI isn’t just a one-year event either. It can afford producers an opportunity to introduce some high value genetics or some specific traits into replacement cattle they may not be able to afford if looked at their higher value bulls.

The five- to six-year-old Angus cows were bred in the spring of 2013 with calves weaned October 2014. Lardner used a fixed-time artificial insemination (FTAI) program with semen frozen in a liquid nitrogen bank. They were administered a progesterone program to bring them into heat at a fixed time. The centred commercial AI technician handled the actual insemination as cows began to cycle within about 48 hours of the synchronized heat-inducing treatment. Ten days after the AI service, cleaning bulls were placed with the cows for 47 days.

The other natural service group of 40 Angus cows was exposed to breeding bulls over a 63-day breeding season. The bulls were tested for fertility and soundness and distributed with cows at a ratio of 25:1 (cows to bulls).

Both groups were preg tested 90 days after the FTAI program. Here are some numbers (see Table 1).

More calves on the ground
Assuming all things being equal, the AI group had a five per cent higher pregnancy rate than the natural service group. The AI group had a 12.5 per cent higher calving rate — more calves on the ground with slightly higher birth weights. The AI calves had a slightly lower weaning weight — 606 pounds versus 629 pounds — but again a 12.5 per cent higher weaning rate (more calves weaned per female exposed). At the end of the day, the AI calves had a total weaning weight of 22,422 pounds compared to the natural service calves that weighed in at 18,253 pounds. Lardner used a market value of $5.90 per pound in 2014 to calculate values.

So what does it all mean? Lardner says he doesn’t think herd size should matter. An AI program could have an economic benefit whether you’re running 50 head or 500 head. The decision depends on the individual farm, labour availability and degree of management a producer wants to invest in an AI breeding program.

A look at the costs
Keeping five to 10 bulls or more on the farm isn’t cheap. In this study, WBDC economist Kathy Larson figured it costs about $2,124 annually to keep a bull. She based that on a bull with an initial purchase price of $4,000 (minus salvage value) that provides three years of service.

Annual direct feed and medical costs came to $622 per bull. There was a yankage cost of $216 per head, bull depreciation was pegged at $485 per year, and risk of loss was given a value of $600 per head. That totals $2,124 which works out to about $85 per cow (assuming 25 were serviced).

But AI isn’t free either. For this study, Larson calculated it cost about $5,165 to AI the 40 head of cows. That included about $2,232 for the synchronizing treatment and semen and another $715 for the AI technician. The cleanup bull was valued at about $1,700, and he earned his keep. In this study among the FTAI group there was a 50 per cent conception rate with AI service and 20 natural service conceptions.

Larson added another $320 to ranch labour and handling costs. So the AI program cost $5,165 for 40 head or about $130 per cow.

The benefits of the FTAI program came in two places. The AI program had higher costs than natural service, but then it generated $12,090 in increased revenue. Along with that the project also calculated about $5,000 in reduced costs with the AI group due to fewer bulls required, and fewer replacement heifer calves needed.

In the end, the FTAI program had about $17,014 in gross higher profits. Taking away about $5,900 in extra costs, it left a net profit of $11,110.

“Planning is a crucial part of developing this type of AI program,” says Lardner. “You need cattle to have proper nutrition and be in good condition leading up to the date of AI service. You’ll also need some proper facilities for processing cattle. Increased labour is also a factor. So a producer has to look at what they are trying to accomplish and be prepared to supply the extra management to make the program work.”

Lee Hart is editor of Cattleman’s Corner based in Calgary. Contact him at 403-592-1964 or by email at lee@fbcpublishing.com

Fine-tuning replacement heifer savings
Heifer calves still need to grow but perhaps not as much as earlier thought

BY LEE HART

In a scale of one to 10 do you know what your replacement heifer will weigh? It’s not a trick question, but if you’re interested in fine-tuning management to produce calves lower on the ground and produce efficient replacement heifers, using a weigh scale is an important part of the management process.

Kathy Larson of the WBDC at Humboldt, Sask., says a three-year study showed replacement heifers that are about 10 per cent lighter than longtime industry guidelines at time of first breeding, perform just as well as those that are heavier. It is somewhat of a subtle difference but feeding heifers to have them at 55 per cent of their mother’s weight at time of breeding can trim about $57 per head from overall rearing costs. Not huge money, but when you consider the net cost of raising a heifer to first breeding age is between $1,100 and $1,200, saving a few dollars can hurt.

“A general rule of thumb has been to allow replacement heifers weighing between 62 to 65 per cent of their mother’s weight at time of their first breeding,” says Larson. “But we found in our study if you target those heifers to achieve a moderate rate of gain in the post-weaning period they perform just as well as those that had a higher rate of gain.”

And Larson’s work showed even with the slightly smaller heifers at first breeding, reproductive performance was still maintained three calvings down the road. While it adds cost, labour and management, Larson is a proponent of commercial beef producers weighing their cattle. It’s about “you can’t manage what you can’t measure.” There are some general management changes that may produce large benefits, but when it gets down to fine-tuning it is important to know weights of animals and manage for smaller incremental benefits. Larson has even developed a replacement heifer calculator found on their website at www.wbdc.sk.ca. If you know your numbers you can figure out the cost of raising a heifer on your farm.

The average mature cow weight at the WBDC is 1,410 pounds. In Larson’s research, the retained heifer calves averaged 558 lbs at weaning. The moderate-gain heifers needed to gain 1.1 lbs per day in order to reach 775 lbs (53 per cent of 1,410 lbs.) by first breeding. The high-gain heifers needed to gain 1.5 lbs.

Calving distribution, % of total
- T-21 d 48.4 81.1
- 22-42 d 9.1 10.8
- 43-63 d 6.1 8.1
- Wean rate, % 77.5 90
- Call 205-d adjusted weaning weight, lbs 629 666
- Total lbs of calf weaned (205-d adjusted) 18,253 22,422
- # calves weaned / # females exposed

The weighing of heifers is important to know weights of animals and manage for smaller incremental benefits. Larson has even developed a replacement heifer calculator found on their website at www.wbdc.sk.ca.
BEEF DEMAND

The economy needs to improve before consumers will buy more beef

Supply is up, will demand follow?

It is important to understand the current situation of the average consumer and how we got to this point. The recessionary low period occurred back in the final quarter of 2010. U.S. unemployment was hovering at 10 per cent and wages had deteriorated with the surplus labour pool. Consumer confidence was also at a low and the U.S. economy was struggling with low housing starts, a housing crisis and high consumer debt loads. The economy started to improve in 2011 through 2013. Housing starts improved, unemployment was starting to come off the higher levels and consumer confidence was increasing. In 2014, we started to see a notable increase in wages and the labour pool tightened. This acted like an accelerant on the economy, reached their highest level in June 2015 since November 2007 — and 2007 was the highest reading prior to the recession. Some of this is seasonally influenced, but the main point is housing starts have been stagnating or even slowing in certain regions.

By the end of the first quarter of 2015, U.S. unemployment levels were hovering at five percent, below the long-term average of 5.8 percent. While we may see minor adjustments in upcoming months, the large gains have already occurred. We’re not going to see one or two million people go back to work. In fact, it will be difficult to experience significant gains when the main energy sector is contracting.

Finally, consumer confidence, which is a lagging indicator, reached the highest levels in September, 2015 but have since started to ease. Consumer confidence is an economic indicator, which measures the degree of optimism consumers feel about the overall state of the economy and their personal financial situation. How confident people feel about the stability of their income will affect their economic decisions and spending activity. If consumer confidence is high, consumers will be eating out more often and vice versa.

NEGATIVE FACTORS

The U.S. economy is now dominated by higher wages, rising borrowing costs, and corporations struggling with narrower margins. Housing starts are not improving but rather stagnating or slowing. All resource-based companies are struggling, which is the backbone of the economy. It is natural for consumers to demand less.

On top of this, there is election uncertainty. It is very plausible that the U.S. could have a left-wing government, which tends to increase regulation and drive down profits of corporations and decrease spending levels of high-income earners.

I'm not saying beef demand will fall apart, the main point is that income levels are not improving and beef demand will stagnate or marginally decrease in 2016. U.S. ground beef prices are down four per cent compared to February, 2015. U.S. wholesale beef prices dropped sharply before Christmas but are currently at levels not seen since February of 2014.

Jerry Klassen is manager of the Canadian office for Swiss-based grain trader GAP SA Grains and Products Ltd. He is also president and founder of Resilient Capital — a specialist in commodity futures trading and commodity market analysis. A native from Winnipeg, he is a University of Alberta graduate who grew up on a mixed farm located on southern Alberta, which led him to an interest in the grain and cattle production. He can be reached at (204) 504-8339.
Safety reminders when working cattle

Put yourself in the animal’s place to identify hazards

BY HEATHER SMITH THOMAS

Most cattle herds are routinely gathered and worked for breeding, vaccinating, pregnancy testing, weaning and other necessary management tasks. With many cows handled through the chute twice or more annually, it is important to make sure these tasks are accomplished smoothly and safely for the cattle and the crew.

Nora Schrag, a veterinarian with Kansas State College of Veterinary Medicine, says in checking for hazards, producers should first walk through the chutes they’ll be using to hold, sort and restrain the cattle.

“Be thinking in terms of the people working around this facility and take note of anything that might be dangerous to them,” says Schrag. “Many setups use pipes behind animals in the chute alleyway to keep cattle from backing up. Notice the way gates swing and the directions levers go.

“Depending on your setup if you or your head are in the wrong spot when an animal is released, you may get hurt. Make sure you and your crew — especially any new workers — know about the high-risk areas.”

Point out levers and latches and any other tools used when processing cattle and make sure everyone knows where to stand.

“Make sure they are standing on the correct side of the pipe, so that if an animal hits it they won’t end up against the fence,” she says. “Also look at the handling area from the point of view of the animal. I always walk into the tub or down the alleyway, looking for nails or bolts that might be sticking out, or I look for any materials like a flap of tin that an animal could get caught on, or anything they could put their foot through. There might be something that was perfectly fine the last time you worked cattle, but may not hold for today.”

Schrag says seemingly solid handling equipment can get worn by weather and use. So make sure all equipment is sound.

It also pays to handle cattle with the best possible flow through the process. “Point out to the crew that a certain corner or narrow gate is a bit tight for handling several head.” Slow down and take it easy, she advises. “It’s a lot easier to prevent injuries than to fix them later.”

WATCH THE NEEDLES

It’s also good to have human safety reminders when working cattle. “It depends on how many people are involved,” Schrag says.

“If there’s just one person pushing cattle and one person working at the chute, it’s not very complicated. But if there are several people doing things to make it go faster, the risk of getting poked with a needle, or having some other kind of accident increases.

“Be careful of every person and every animal around you. Keep safety precautions in mind. When refilling or holding a syringe, always keep your elbows down at your sides. Then if someone walks past you, they’re not as likely to bump your elbow and bump your hand,” Schrag says.

When quickly refilling syringes, there is a risk of accidentally poking yourself or someone else. Most vaccines aren’t dangerous to humans, but blacking can cause a serious inflammatory reaction. Avoiding accidental needle pokes should be high priority.

“Keep your elbows at your sides, and if you are holding a bottle to refill your syringe, use the finger on one hand to touch the other arm for added stability and steadiness. If someone bumps you, the needle can’t jump into your hand,” she says.

When reaching through bars to vaccinate or apply medication, pay attention to what you are doing. “It is always better to reach over rather than through, when possible,” Schrag says.

“Everyone who has been working around chutes for a long time sometimes get hurt. Anything you can do to minimize situations where your arm could get pinched will help.”

It’s all about anticipating problems rather than helplessly watching them happen, she says. It helps if the people who are doing the vaccinating have had some experience.

Nora Schrag is a longtime grazier and columnist who ranches with her husband Lynn near Salmon, Idaho. Contact her at 208-756-2841.

Make sure handling equipment is solid and in good working order before processing cattle.
Lots of bull, but people too
The 116th annual Calgary Bull Sale opens with optimism

Lee Hart

Breeders were optimistic for the opening morning of the 116th Calgary Bull Sale, held in early March at a totally new venue in the barns of the Century Downs Racetrack, at Balzac, just north of Calgary.

While the full story would be told over the next two weeks, once the auctions actually started, the 25 Hereford and Angus bull consignors were feeling pretty good that prices would hold this year as commercial cow-calf producers look to improve or expand their herd numbers.

If nothing else the access and parking was way better at Balzac than trying to negotiate trucks and trailers into the always busy and congested parking lot of the longstanding show barns at the Calgary Stampede Grounds.

While billed as horned cattle sale, there were several polled Herefords in the stalls tended by about 20 consignors, as well as a few head of black animals from four Angus breed consignors.

And if you needed to improve mobility around the farm, there were also about a dozen primers looking well-groomed, and fully trained ranch horses from different ranching operations across Alberta as well as Avoilea and Wilkie, Sask.

I’ll try and get sale results for the next issue of Grainews, but here are a few faces of those participating in the 2016 show and sale.

He’s not the biggest beef operator in the country, but Kyle Francis, 24, says he is working on building his purebred Goodview Angus herd.

Born and raised on the family farm at Indus, just east of Calgary, Francis says he started raising cattle when he was nine. Although he only has eight head, he is planning to take the proceeds from the sale of this long-yearling Black Angus bull and buy some bred heifers.

Bruce Butler, who along with his wife Karen operates Lone Pine Ranch, brought two coming-two-year-old Hereford bulls to the Calgary Bull Sale.

They run between 100 and 120 purebred cows on the farm at New Norway, just southeast of Edmonton. It was his first time at the Calgary Bull Sale, although they have been showing and selling cattle at the Lacombe Bull Sale, coming up April 17, for about 20 years.

Along with bulls they also sell replacement heifers.

Hal Nixdorff of YY Ranch near Airdrie is among a long line of Nixdorff families producing purebred cattle. YY Ranch had eight horned bulls including seven two-year-old bulls and a bull calf up for offers at the Calgary Bull Sale. The ranch has been attending the sale for 30 years.

Fitting cattle for the show ring is a detailed operation, says Mike Panasiuk, with Church Ranches, who was getting these two-year-old bulls ready for the show and sale ring at the Calgary Bull Sale. He used a blow dryer and a few strokes of the comb to get hair to the hide lying just the right way, along with a prayer that nobody lays down and ruins the look before show time.

Lorne and Megan Davie run a 200-head commercial cow-calf ranch and small backgrounding operation near Wilkie, Sask., but they also train a few ranch and performance horses as well. This seven-year-old Palomino passed its physical and was being washed and groomed for the Ranch Horse Sale at the Calgary Bull Sale. Lorne is also general manager of West Central Pelleting Ltd at Wilkie.

MJJ Wook and his father Miles, run a cow-calf operation near Myrnam, Alta., east of Edmonton, but they also train a few ranch horses. Above, MJJ holds the halter on this four-year-old papered Paint horse while veterinarian Ty Corbiell checks out the soundness of the animal before it goes into the ring for the Ranch Horse Sale.

Veterinarian Ty Corbiell, who operates Cor Veterinary Services at Cluny, Alta., east of Calgary, made sure the dozen animals to be auctioned at the Ranch Horse Sale were all physically sound and in good health. With stethoscope in place, he didn’t miss a beat.

Photo: Ted Wootton

Lee Hart is editor of Cattleman’s Corner based in Calgary. Contact him at 403-592-1964 or by email at lee@fbcpublishing.com

An in-calf or other type of scale can provide necessary information for fine-tuning livestock management.

CONTINUED FROM PAGE 39

FINE-TUNING REPLACEMENT HEIFER SAVINGS

per day in order to reach 874 lbs. (62 per cent of 1,410 lbs.).

The post-wean diet consisted of smooth bromegrass-alfalfa hay and rolled barley. Choice salt and mineral were also provided. Each weight group received a feed formulation based on National Research Council requirements for growing heifers and the targeted rate of gain.

All heifers were placed on their respective post-wean diets in early November and were fed those diets for approximately 200 days until spring pasture turnout at the start of June. The feed and related development cost for the moderate-gain heifers was $212 per head, while for the high-gain heifers it was $269 per head. Feed costs alone for the moderate-gain heifers were 28 per cent lower than for the high-gain group.

From pasture turnout onward, the heifers were managed together, first on mixed crested wheatgrass/smooth bromegrass pastures, then on barley greenfeed swaths (Nov. 1 to mid-Feb.) and then on grass-legume hay with range pellet supplementation (mid-Feb to May 30).

The study followed them through their third calving.

For more details on Larson’s study again visit the WBDC website at www.wbdc.sk.ca
Important to look at unit costs

All expenses can be looked at in terms of cost per head or cost per pound

BY SEAN MCGRATH

I

It is relatively easy to find product offerings that promise to increase production. As a somewhat skeptical consumer, these technologies/solutions always need to be examined carefully before deciding whether or not they are worth using. That said, all of these products tend to reinforce one simple point: production matters.

The less simple aspect of this is that any boost in production must come in reference to its cost. In other words, margin matters more.

Every pound of calf tends to come at a reduced price. One needs only look at the Cantax report on different classes of cattle to see that each 100-pound weight break is generally sold at fewer dollars per pound than the break before. In other words, every pound in a 500-pound calf is worth slightly more than the pound in a 400-pound calf. This means we need a sharpened pencil.

KNOW YOUR COSTS

What is really important and what most of us struggle with is our per-unit cost, or cost per pound. Knowing this helps us to figure out a technology is worth deploying.

A lot of folks will think about per-unit costs as the cost of feed or vaccinations and this is fair, but we can’t forget about capital costs as well. Let’s consider a cow herd with a vaccination protocol that costs $30 per call. This might include a prebreeding vaccination on the cow, and two rounds of vaccination for the call. If we sell a 500-pound calf, that is a cost of $6 per hundredweight. If calves average 600 pounds we have automatically reduced that to $5. By increasing production, we have dropped our per-unit cost. Vaccines are a good example where the dose does not change based on calf size, so the gains are fairly straightforward.

If we can create an additional live calf for sale, our per-unit cost also drops.

FERTILIZING PASTURES

Things are a bit more complex if we look at technologies with a diminishing rate of return. A good example might be deciding to fertilize a pasture. How much added production does the pasture produce based on our fertilizer investment? Can we capture this added production as pounds for sale? Does the result yield more than the expense?

For example, let’s use an investment of $80 per acre in fertilizer. How many extra grazing days will that produce? If we gain 20 grazing days per acre and our calves are gaining two pounds per day, the ranch has gained 40 pounds of production per acre. The cost of that gain is $2 per pound. There are obviously other considerations here, such as if all the benefit will be used up in the first year, actual production boost may be higher and other factors, but in this example the fertility treatment might be a marginal decision. Perhaps investing only $40 per acre will get us 15 days per acre, at a much lower cost per pound.

ARE YOU OVERCAPITALIZED?

Another overlooked area is that of capital investment. The simplest way to think about a capital investment is that if it is big and made of metal it is probably a capital investment. Most of us are *overcapitalized*.* We often look at these big cost behemoths as not being a unit cost. But even a $10,000 tractor has a unit cost.

If we use that tractor to feed 150 cows and it depreciates by 10 per cent per year, the cost is $15,000 or $100 per cow. If we use 500-pound calves the cost is $20 per hundredweight. This does not include the cost of operating the tractor, just the capital cost. If we use 60-pound calves the cost drops to $16.67 per hundred. But if we can use that same tractor on 600 cows, our cost drops to $50 per cow or $10 per hundredweight on 500-pound calves.

Conversely, doing the job with a $7,500 tractor also accomplishes the same unit cost outcome in our 150-cow herd.

Further complicating the matter with a lot of capital assets is the fact that some investments may be used in more than one enterprise — for example a tractor used in feeding operations may also be part of a grain operation. The key is to be fair with which portion of the investment is used by each enterprise.

WHAT ABOUT LAND

Land is another good example that may be the main driver of unit costs. If you are paying pasture rent on a cow/calf basis then bigger cows and calves make a lot of sense, since every pound you add reduces your cost per pound. Pasture productivity does not directly factor into your unit cost.

If your pasture is valued on a dollar per acre rent or you hold a mortgage, then grass productivity directly drives your unit costs. If you can double or triple production on a pasture with a low investment then you can create more pounds per acre and reduce your cost per pound.

At the end of the day profit is more than just cash. In triple-bottom line accounting, profit is assessed financially, socially and environmentally, and these are all aspects worthy of consideration. Some investments, such as part of that new tractor, may simply be for comfort or enjoyment of the operator.

In other words, not every investment is strictly profit driven in the classical sense, but generally speaking investments that create more revenue than they cost are usually a good idea. Production really does matter, but only in the context of unit cost. As unit cost rises, or margin decreases the risk associated with that production increase, increases as well. For each increase in unit cost, we must make sure we can market product above that cost.

Production matters in its tremendous power to reduce unit cost, but production is not free. Keeping this in mind will help to make better decisions that increase profit.

By Sean McGrath

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Cattleman’s Corner

There’s value in high-quality beef
Healthy pounds and consumer demand drive cattle business

(Editors’ Note: This article supplied courtesy of Certified Angus Beef, show X producers are also encouraged to produce a quality beef product. It further supports recent articles by Cattleman’s Corner consultant Sean McGraith about using the tools to build a beef “Cadillac.”)

BY LAURA CONAWAY

What’s in a cow today? Dr. Larry Corah asked 175 cattlemen at the annual Northwest Florida Beef Conference to consider the steep increase in carrying costs. The seasoned educator spoke on adding value to cattle, but pointed out spending often comes before making money. “I’ve always been intrigued with what it costs to run a cow,” Corah said. All across North America, the recent rise in costs is unprecedented in his lifetime, he said. “Sure, some places took 20 to 30 acres; others two or three, but land requirements won’t always be the same,” he said, noting a few years ago a typical range of US$3,500 to $4,000 per cow per year. Today, he says that number has at least quadrupled to a range of $14,000 to $18,000 to own the land that for cow unit. As the large mass of two-year-old heifers added to the national herd in 2014 reach maturity, competition for space tightens. Cattle and grain market price declines could pause the runup in cost, Corah said, “It isn’t going to weaken a lot. That’s an amazing investment per cow to try to invest in this industry.”

Pair that with the “tremendous volatility” of today’s cattle market and anyone would wonder about the future. But Corah, long-time extension beef specialist in Kansas and recently retired vice-president at Certified Angus Beef LLC, said there are still dollars to earn. Cattle health, weight and consumer demand drive profits. “In terms of the value of the calves that leave your ranch, these are the big ones as cattle move through the pipeline,” he said. Health, Corah says, has taken on a new relevance as overstocking of an animal increased. Encountering sickness coming into the feedyard or death during the stay is felt more keenly than in years past.

Dr. Larry Corah says with land costs of at least $14,000 per cow unit, producers need to find more value in beef.

POUNDS ARE IMPORTANT

“We’re still a pounds game,” he said of the next factor. “In this industry we sell pounds and cattle have got to have the ability to grow. That’s a key driver, so don’t lose sight of that.”

Even more important is the consumer. In a shift greater even than he could have predicted, Corah said approximately 70 per cent of all cattle fed today are sold on a grid-based system that identifies individual animals and offers premiums or discounts for value markers like quality. “The consumer is the one determining the value of your cull cows and the price you get for your calves,” he said. “We have to produce a product that the consuming public desires and wants, but the great news is they’ll pay for it.”

Prime beef is becoming a more feasible target, Corah said, available in national retail and food-service chains and creating “an economic opportunity available for the industry’s taking.”

QUALITY IS REWARDED

Prime premium in February was about $12 per head over Select at most plants, but $45 more for premium Choice or another $150 per head for Prime. That’s driven by even wider differentials in price for beef product loaded onto the refrigerated trucks. “Folks, that’s a lot of price spread based just on the quality grade of those cattle,” Corah said. “The consumer is telling us what they want and they’re creating price opportunities that will funnel back to the feedyards, to the stocker operators, to you as the cow-calf men.”

On an even more positive note, Corah closed with a snapshot of progress made in recent years.

“Compliments to what you’re getting done,” he said. “Albeit a subtle one at times, you’ve really changed cattle over the last 20 years. Cattle are very different today and you’re making even more tremendous progress.”

Increased functionality shows in the move from 30 per cent heifer calving difficulty in northern states to less than five per cent today. Fitting market demand shows in the greater number of Angus-based cattle from across the U.S. able to hit heavier weights profitably.

In 1990, the share of predominately black cattle coming out of U.S. feedyards was 30 per cent. Excluding Holsteins, in 2016 the number falls between 75 and 77 per cent black-haired.

Horse owners can do this themselves by raspning away superficial cracks and keeping the hoof edges smooth. White line disease and other types of hoof infections can’t get started if there are no openings to allow pathogens into the foot. Periodic rasping around the edges can prevent or eliminate cracks and flares, but the sole should usually be left alone. It needs a thick callous to prevent stone bruises. Leave the barefoot horse with a slightly higher hoof wall than a foot you’d put a shoe on, but don’t overdo it, raspning whenever it becomes ragged. It’s not necessary to clean out the talon regularly if the horse is at pasture (rather than standing in a stall or muddy corral). Lying down on one area of the feet helps provide foot support, to protect and cushion the foot. You should periodically look at the feet, however, to make sure there are no cracks or other early signs of degeneration. The material that packs into the foot will fly out when the horse exercises. Horses in the wild travel on abrasive terrain, which keeps their feet trimmed and smooth. No one cleans or trims their feet.

CONDITIONS DICATE

Environmental influences play a role in what’s needed for hoof care. A horse that lives in dry conditions will have healthier feet than a horse living in a marsh. Feet become hard when dry, soft when wet. Hard, dry, rocky footing is best for horses. If the horse has good hoof conformation and hard, dry feet, he won’t need shoes unless he is being ridden a lot in rocky terrain.

Some people put dressings on the hoof wall to try to correct too-dry feet, but if a horse’s feet are cracking it’s important to figure out why, rather than just trying to treat the symptom. Cracking may be due to an inadequate diet. Horses on green pasture usually have healthy hoofs. Poor hoof walls can be due to too much (or not enough) selenium. There may be a trace mineral imbalance, or lack of physical balance, putting too much stress on one area of the feet. Oral hoof supplements are often used, but the horse’s environment has more influence over the foot than anything we can put in the horse’s gut. If a horse has a well-balanced diet he won’t need hoof supplements. Most hoof supplements contain selenium, methionine and biotin. Evaluate the whole diet to make sure you aren’t dosing up selenium supplements in feeds, mineral-salt blocks, and vitamin-mineral products.

KEEP THEM MOVING

Exercise is also important for healthy feet. Blood circulation in the foot is better if the horse is moving. When you confine a horse in a stall or small pen, his legs may stock up (swell) because of decreased circulation. The legs are gravity-fed by blood, and unless the horse is moving, to push blood back up to the heart, legs tend to swell. Ranch horses at pasture are generally healthier than horses in stalls. No matter how clean a stall is, the horse is still standing in ammonia and bacteria and not getting enough exercise.

Look at the whole picture to decide whether a certain horse needs a supplement, a topical hoof medication or shoes. There are no guidelines that fit every horse. You could have two horses of similar breeding, in the same environment, eating the same feed, doing the same work, and their feet may be different. Conformation and hoof structure may be different. Some have a longer pastern/shoulder angle, with different stresses on the toe. Some horses have harder or softer feet, or more brittle and prone to cracking.

There are no set rules about what to do about certain problems, because it’s variable with the individual horse. It’s an individual trial and error, to find how best to care for a certain horse’s feet.

Basic foot care consists of keeping things as simple as possible, however, keeping the horse in as natural an environment as possible and trying to think how Mother Nature took care of horses. Proper care involves natural feeds (grass and hay) and plenty of exercise. The most important thing is to look at the individual situation, the individual horse, and what works best for that horse.

Horses can become self-carers if they have the proper footwear and daily care.
How to have your voice heard

Here are some tips to have your opinions and ideas count at the farm decision-making table

ELAINE FROESE

I've consumed a bit too much chocolate in my adventures at the Hershey Lodge in Pennsylvania. You are given a large Hershey bar at check-in, a bag full (over 10 chocolate kisses with room service breakfast) and chocolate butter at the banquet table. Even the shampoo and conditioner smell like chocolate!

Many women love chocolate. It may be due to the supposedly wonderful chemical theobromine in it which gives females the sensation of being "infatuated"… at least that is how I recall the story.

In Hershey I was presenting: Conflict Dynamics in Family Business, to vegetable and fruit growers. We also had a lot of apples for snacks!

The thread of conversation that struck me was from the non-family members, i.e. employees who were looking for ways to have a voice in the decision-making of the farm. This hits home for me, as we have two non-family employees on our farm. Do they feel like their voices are heard? 

Tips for having a voice:

1. Use your voice. Be gracious and respectful. Come from curiosity. “I was wondering if you would be open to me giving you some input on this problem we are trying to solve.” I cannot read minds. I need to hear your voice and your opinions. Be silent no longer.

2. Try to understand the perspectives of the owners and shareholders of the farm. Managers are juggling many priorities. Make sure your timing for your request is reasonable. It really helps if the farm team has a formalized process like a staff meeting with a clear agenda. This gives you time to prepare your approach, do your research, and process how you would like to express yourself.

3. Stop yielding. Yielding is a negative conflict resolution tool if you are always giving in to the other partners or employees. Your opinion and ideas count. A seasoned farm woman confessed to me that her throat actually closed up when she was getting ready to make a strong statement to her farming brother and father. Her lack of validation over the years had dramatized the message. In other words, let every voice on your farm team be heard. Choose your words of encouragement carefully to build rapport. Learn from one another with a learner mindset, not judging, and celebrate the wins. You need to let people challenge new ideas before they can accept them.

4. Take baby steps to build up your confidence. Perhaps the first approach is to write down your ideas on paper in a word document or use a mind-mapping technique to branch out all of your ideas. If you are nervous in communicating, you can use the notes as your talking script. I have seen this be very effective with a sensitive widow who wanted to communicate clearly her estate-planning intentions with her distraught adult children.

5. Read Conversational Intelligence: How Great Leaders Build Trust and Get Extraordinary Results, by Judith E. Glaser. Glaser speaks of Level 3 or transformational conversations that build trust, are transparent, and build relationship. She says, “unhealthy conversations are at the root of distrust, deceit, betrayal and avoidance… which leads to lower productivity and innovation, and ultimately lower success.”

6. STAR SKILLS™ Glaser uses are skills that achieve results: build rapport, listen without judgment, ask discovery questions, reinforce success, and dramatize the message. In other words, let every voice on your farm team be heard. Choose your words of encouragement carefully to build rapport. Learn from one another with a learner mindset, not judging, and celebrate the wins. You need to let people challenge new ideas before they can accept them.

7. Love does not read minds. No more silence at the farm board meeting table. Give everyone a chance to express their thoughts openly and without fear. Seek to understand the other person’s intent, their “why.” Let people have time to tell stories to get their points across. Fear shuts out people’s voices. Create a place where honesty, empathy, and a shared vision of success for the farm are welcomed. Use great listening skills and discovery questions to build understanding. Your goal is to increase the transparency of your conversations in your farm business, and your family.

8. Create a vision board for your farm. Cut out pictures of what success for your farm looks like or print them off your phone or Instagram collage.

Framilies communicate clear expectations and create certainty for securing legacy. Visit www.elainefroese.com to create a family mission statement and a shared vision of success for the farm.

If you are longing to have more of a voice on your farm because you can see the immense potential ahead, it is time to speak up, speak out, and be heard.

Elaine Froese, CAFA, CIAChS, has helped farm families communicate clear expectations and create certainty for securing legacy. Visit www.elainefroese.com for your farm. “Framilies communicate clear expectations and create certainty for securing legacy.”

Chances are, you have something exciting on the drawing board right now. Maybe it’s more land, a new equipment, higher-value crops or other ways to grow.

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** ELAINE FROESE**: farm family coach helps farm families communicate clear expectations and create certainty for securing legacy. Visit www.elainefroese.com | email: elainefroese@elainefroese.com | twitter: @elainefroese | like “Framilies Connect” on Facebook. Share your stories with elainefroese@elainefroese.com. Buy Elaine’s books at www.elainefroese.com/store.
Prairie Driving Club growing in popularity
Combination of driving, competition and socializing with focus on safety

BY EDNA MANNING

E
legance, skill, and teamwork are words that come to mind watching members of the Prairie Carriage Driving Club participat

ing in one of their events. Carriage driving is growing in popularity among horse owners and there are clubs in many prov-

inces across Canada.

“They have to love horses and you have to enjoy driving. It’s a lost art in many ways,” says Bill Humeny, one of the club’s foun
dering members.

Several equine enthusiasts interested in driving founded the Saskatoon-based club in 1999. As well as helping new members get started, Humeny says the organization stresses the importance of safety — the proper use of animals as well as training and educating drivers.

“We’re focused on helping people learn to drive safely. Even basic things like how to properly harness a horse and adjusting the harness to the Hitch are important because if you don’t do it right, it can cause problems,” he said.

There are currently about 25 members in the club, about half are women. “Some people who used to be riders switch to driving because it’s a little less physically demanding on the body. We also have young people in the club who enjoy the activity. It’s a good combination of a driv-
ing club and a social club and we have potlucks at nearly all our get-togethers. It’s a compatible group that works well together and we all help each other out,” Humeny said.

Members participate in recreational driving and some have been involved in competitive driving which includes Pleasure Driving and Combined Driving.

Pleasure Driving involves show ring competition for horses or ponies in vari-

ous classes. The emphasis is on the horse’s grooming, appearance and performance as well as the driver’s skill.

Combined Driving has three events: dressage, cross-country marathon and obstacle cone driving. In the dressage, drivers perform a set of movements like circles, figure eights, trots, canters, turns and halts. “In the cross-country mara-
thons there are about five or six hazards built into the course that you have to work your way through, requiring a well-trained and well-conditioned horse and a lot of communication between horse and driver. In the cones course, drivers have to go through an obstacle course of 20 cones with limited clearance within a set-
time,” said Humeny.

The club has several organized driving events every year, one of them being a fundraiser for cancer. “This year we raised almost $4,000 which was donated to the Saskatoon Cancer Centre for patient com-
fort,” Humeny said.

The club conducts regular seminars and clinics throughout the year to assist members to acquire better driv-
ing techniques. “The clinicians we bring in are very well-qualified instruc-
tors,” said Humeny, who has been rais-
ing registered Canadian horses since he moved out to his farm near Saskatoon in 1994.

For more information about the Prairie Carriage Driving Club go to www.
drivesask.ca.

Prairie Driving Club is a good combination of driving and socializing.

Don’t throw out that ham bone
If you plan on having Easter ham keep the bone to make soup

BY AMY JO EHMAN

S
ometimes I eat out of the garbage. Case in point. One year as we cleaned up Easter dinner, I asked my sister-in-law what she did with the ham bone. It was a good ham and she enjoyed it immensely. As I was eat-
ing it, I thought of the (even more) delicious soup I could make with the bone.

She pointed to the garbage bin. Sure enough, there was the ham bone beneath a pile of paper napkins and soggy coffee grounds. I picked it out, washed it up and the rest was history… or lunch.

Somewhere in my formative cooking years, I heard this wise piece of advice from a chef of Italian heritage: “Don’t waste good flavour.” By this she meant, don’t discard anything in the process of cooking one thing that might flavour something else. It’s an adage of cucina povera, the frugal wholesome cooking of the poor.

That ham bone? It’s the flavour in a pea soup. Bacon dripping? Fry up some onions for chili. The smoked Parmesan cheese? Toss it into a soup pot or simmering rice. Or do like Italian mothers and give it to a teething baby.

I keep a zipper bag in the freezer for carrot peels, onion skins, tomato ends, parsley stems, broccoli stalks, etc. When it’s full I boil up a tasty vegetable stock. The soggy vegetable bits go into the compost, which becomes food for my garden.

Of course, the pioneers and Depression-era cooks were masters at reusing every bit of good flavour, as this example illustrates: leftover pickle juice was used to make more pickles, including watermelon pickles, which gave new life to the rinds.

It’s estimated by the FAO (Food and Agriculture Organization of the United Nations) that one-third of our worldwide food supply is wasted. For instance, 30 per cent of cereal crops are lost. More than 40 per cent of fruits and vegetables are discarded. Twenty per cent of meat raised for human consumption never reaches the din-
nner plate. These losses take place at five points in the food chain: farming, post-harvest storage, processing, distribution and consumption. In wealthy countries such as Canada, more than 40 per cent of the loss occurs in the final stages — in retail stores and consumers’ kitchens. In stores, the waste is often based on appearance. In the home, it’s often due to spoilage and sim-
ply throwing it away.

I’m trying to change that, one bone at a time. Nowadays, my sister-in-law sets the ham bone aside for me, so forays into the garbage bin are well and gone. However, I am now facing com-
petition from a new family member — a German shepherd. While I would never take food from a baby, I have no problem taking it from a dog. After I’ve made my pot of soup, she can have it back. That’s three meals from one bone.

If you miss any previous recipe, you’ll find it on my food blog homefordinner. blogspot.com.

HAM BONE SPLIT PEA SOUP

The bone often has enough meat on it for soup, but if not, add a handful of leftover ham. Since cured ham has been salted, additional salt is added at the end of cooking.

1. medium ham bone
2. 2 cups water
1-1/2 c. yellow split peas
1 bay leaf
1 medium onion, chopped
Salt and pepper

Put everything except the salt and pepper into a stock pot. Bring to a boil, then lower the heat, cover the pot and simmer 2-3 hours, until the split peas are completely broken down and the onions have disintegrated into the broth. Cool. Remove the bone, bay leaf and chunks of carrot. Dice the carrot and toss it back into the pot. Pick the meat from the bone and add to the pot, or add some leftover ham, shredded or chopped. Discard the bay leaf (which is to say, toss it into the vegetable stock zipper bag in the freezer or into the compost). As for the bone, you can now give it to Spot, who will happily notice the difference. Reheat the soup. If it has thickened, add water until you have a pleasing soup consistency. Season with salt and pepper as needed to taste your style.
Peas porridge hot, peas porridge cold... Did people really make porridge from split peas?

BY DEBBIE CHIKOUSKY

A staple in our house is soup — the homemade kind starting with mak­ing broth from our home­grown grass-finished beef bones. On occasion we make turkey, po­sh, goat, sheep and chicken bones. The nutrition and convenience is unbe­atable, but now there is a bit of a challenge. The gluten-intolerant members of our family now include the legume family we enjoy is chick­peas. I checked on Google and sure enough — people actually used to make porridge from split peas. I thought of the old nursery rhyme, “Peas porridge hot, peas porridge cold, and wondered if people really did make porridge from split peas. I checked on Google and sure enough — people actually used to make porridge from split peas. They could be used for thicken­ing up soups, breakfast, and side dishes and they are inexpensive.

PEA PORRIDGE

1 lb. split dried yellow or green peas
1/3 c. bone broth
1 tsp. sea salt
2 tbsp. coconut oil

Place peas in a bowl and cover with water to a depth of 2 inches above the peas. Set aside to soak 6 hours or overnight. Drain peas and place in a soup kettle. Add bacon, carrots, and onions and stir to mix well. Cover with water to a depth of 1 inch above the mixture. Add sage. Place over medium-low heat and bring to a boil. Reduce heat until soup is barely simmering, cover and sim­mer 2 to 3 hours or until peas lose their shape and start to become creamy. Add a little boiling water from time to time if necessary. You should have a thick soup, but not what we think of today as porridge. When soup is done, remove bacon chunks. Sauté bacon in butter until brown on all sides. Add salt and pepper. Can be served with cream.

CURRIED PEAS

4 c. dried split peas
8 c. bone broth
(previously prepared)
2 tbsp. curry powder
1 onion, chopped
1/4 c. coconut oil

Preheat oven to 350°F. In the meantime sauté onion and curry powder in a Dutch oven for about 5 minutes — just long enough to heat the curry powder through. Add the peas and stir. Add the bone broth and stir. Do not add salt as it will toughen the peas. Cover and cook approximately 2 hours. Stir every 30 minutes. This is a link to how we make our bone broth: http://www.chikouskyfarms.com/article/24/healthy-soups-start-with-healthy-broth.

NUTRITION FACTS

Did people really make porridge from split peas?

- Nutrient deficiencies are common in people with gluten intoler­ance/celiac disease. The nutrients to be diligent at building into the daily menu are B vitamins (B12, folate, thiamine, riboflavin and niacin) as well as the fat-soluble vitamins A, D, E, K and minerals at risk for deficiency include iron, zinc, copper, magnesium, and cal­cium. For our family, supplements were also not tolerated well so we were very excited to find that dried peas as well as other members of the legume family are very high in these nutrients. A full profile can be found at http://www.whfoods.com/genpage.php?name=nutrientprofile&coid=15.

Another member of the legume family we enjoy is chick­peas. We buy dried otes and soak them overnight and cook them for use in many recipes. One of our favourites is as a snack food.

ROASTED CHICKPEAS (Makes about 2 cups)

1 lb. dried chickpeas, soaked and cooked OR 2 (13-ounce cans) chickpeas
2 tbsp. coconut oil
1/2 tsp. sea salt
2-4 tsp. spices OR finely chopped fresh herbs (e.g. chili powder, curry powder, garam masala, cumin, smoked paprika, rosemary, thyme)

Heat oven to 400°F with oven rack in the middle. If using canned chickpeas they must be rinsed, drained and dried. If using dried they must be cooked and cooled. Toss the chickpeas with coconut oil and salt. Spread the chickpeas out in an even layer on the baking sheet. Stir with your hands or a spatula to make sure the chickpeas are evenly coated. Roast the chick­peas in the oven for 20 to 30 minutes. Stir the chickpeas or shake the pan every 10 minutes. A few chickpeas may pop — that’s normal. The chickpeas are done when golden and slightly darkened, dry and crispy on the outside, and soft in the mid­dle. Sprinkle the spices over the chickpeas and stir to coat evenly. Serve while the chickpeas are still warm and crispy. They will gradually lose their crispiness as they cool, becoming addictively chewy.

This group of legumes is also very nutritious. Eating them for a snack will provide a source of molybdenum and manganese. They are also a very good source of folate and copper as well as a good source of dietary fibre, phos­phorus, protein, iron, and zinc.

We are also delving into the different ethnic recipes based on legums — everything from hummus to refried beans — thoroughly enjoying the new tastes we have been trying.

Debbie Chikousky farms at Narcisse, Manitoba

We all share the same table.

Pull up a chair.

“Peas porridge hot, peas porridge cold... Did people really make porridge from split peas?”

“Safe food; animal welfare; sustainability; people care deeply about these things when they make food choices. And all of us in the agriculture industry care deeply about them too. But sometimes the general public doesn’t see it that way. Why? Because, for the most part, we’re not telling them our story and, too often, someone outside the industry is.”

“The natural environment is critical to farmers – we depend on soil and water for the production of food. But we also live on our farms, so it’s essential that we act as responsible stewards.”

“Another member of the legume family we enjoy is chickpeas. We buy dried otes and soak them overnight and cook them for use in many recipes. One of our favourites is as a snack food.”

“As a farmer, the welfare of my animals is one of my highest priorities. If I don’t give my cows a high quality of life, they won’t grow up to be great cows!”

“People really did make porridge from split peas.”

“Pull up a chair.”

“We take pride in knowing we would feel safe consuming any of the crops we sell. If we would not use it ourselves, it does not go to market.”

“Pull up a chair.”

“Pull up a chair.”

“Pull up a chair.”
Ted talks tomatoes and shares reader tips

Plus, info on green potatoes and inoculant for legumes

Ted Meseyton

I heard from a Calgarian whose email lead me to a phone song I wrote. Here are some of the lyrics.

"Coronation is a unique spot on the West Coast. It's well known for its gardening skills. At the young age of 77, she still loves to put in a very large garden on her farm (enough to feed a family of 10), I'm sure. It is my ultimate treat to reap the benefits of my mother's garden. — Thank you, Allan.”

GARDENERS LOVE TO PARTY

At least that's what I sing about in a song I wrote. Here are some of the lyrics.

"Gardeners love to party,
To sing and swing and tap their toes,
And laugh like kids and let 'em be!
And for dessert eat Smarties.
Gardeners love to party,
And when they're not gardening,
They eat hall and hearty,
Gay and good ol' super spud or tater. Don't we call 'em potatoes too? As always, it's a fine how-do and how are you, everybody.
"Hello Ted, We live 10 miles south of Stettler, Alberta. The soil pH is about 6. Last spring we worked some hot lime on the whole garden. That is the only difference in our planting. Some years we buy seed but can't remember what we did last spring. The potatoes looked lovely and a good size, nicer than we've had for years. They were in plastic pails covered with plywood. Sometime in Dec. we noticed the bitter taste and the potatoes turned green. — Thank you, Allan.”

For a long time, I've been trying to reach you with some very bad news. I have some bad news and I'm not aware existed.

"Doctor, what could be worse?
"Matter of fact all pea and bean seeds need in simple terms after speaking with a longtime commercial potato grower. A storage temperature of 4 C (40 F) is OK, as long as it doesn't drop below 37 F, and it should remain consistent. Secondly, stored potatoes should not be exposed to light, not even low light, nor for the shortest time, whether natural or artificial light. The long and the short of it is this: Both store-bought and home-grown potatoes will turn green when they are exposed to light resulting with increased production of a toxic alkaloid called solanine.

Consuming a large quantity of solanine can cause illness such as digestive issues and neurological problems, or even death in extreme cases. Most people know not to eat the affected bitter-tasting green tissue. The highest concentration of solanine is in the potato skin. Cutting away the green portion removes most of the solanine. Gardening know potatoes that appear too close to soil surface will show signs of greening. The reason for this is to provide plants with mounds of soil to blot out even a tiny smidgeon of light. Complete darkness is the key to preventing a colour change. Any sign of green is a warning there's presence of toxic solanine. Keep in mind that potato plants can suffer and show discomfort from stressful growing and environmental issues too, such as adverse weather, pests and plant diseases. Dealing with a lot of stress are not happy campers. Plants are no different.

WHAT IS INOCULANT FOR LEGUMES?

I mentioned during my March 8 column that inoculant can really add benefit to sweet peas pre-treated with it. Matter of fact all pea and bean seeds and other legumes will have gain. West Coast Seeds describes inoculant as "a fine, powdered compound of beneficial bacteria called rhizobia that kick-start the nitrogen-fixing process exhibited in these plants. Beans and all legumes have little swollen nodules along their roots where symbiotic bacteria form colonies and begin to draw nitrogen from the atmosphere and soil. The accumulated nitrogen helps the plants grow better. Some of the nitrogen also remains in the soil after plants are harvested or cut down. This provides a benefit to future crops planted at a later time in the same spot. Full directions for use come with each package of inoculant. Both big and Big Beef slicing tomato seeds are available from West Coast Seeds, at Delta, B.C., phone 488-8462 (4802), website westcoastseeds.com. Other garden centres also carry various tomato seeds and inoculant.
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