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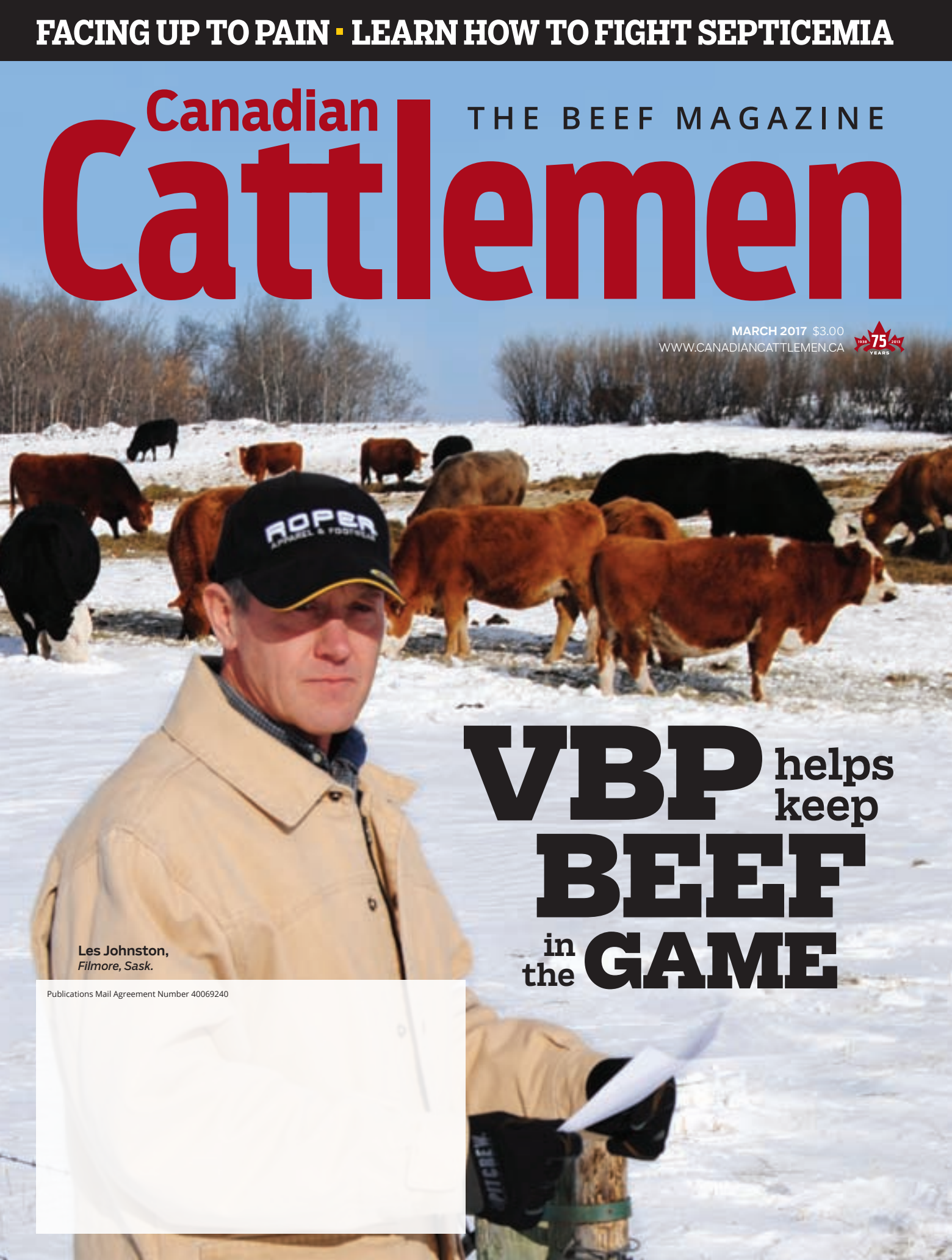

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Les Johnston,
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CATTLEMEN EDITORIAL
Editor: Gren Winslow
1666 Dublin Avenue, Winnipeg, MB R3H 0H1
(204) 944-5753 Fax (204) 944-5416
Email: gren@fbcpublishing.com

Field Editor: Debbie Furber
Box 1168, Tisdale, SK S0E 1T0
(306) 873-4360 Fax (306) 873-4360
Email: debbie.furber@fbcpublishing.com

ADVERTISING SALES
Sales Director: Cory Bourdeaud'hui
(204) 954-1414
Email: cory@fbcpublishing.com

National Sales: Mike Millar
(306) 251-0011
Email: mike.millar@fbcpublishing.com

Tiffiny Taylor
(204) 228-0842
Email: tiffiny.taylor@fbcpublishing.com

HEAD OFFICE
1666 Dublin Avenue, Winnipeg, MB R3H 0H1
(204) 944-5765 Fax (204) 944-5562

Advertising Services Co-ordinator:
Arlene Bomback
(204) 944-5765 Fax (204) 944-5562
Email: ads@fbcpublishing.com

Publisher: Lynda Tityk
Email: lynda.tityk@fbcpublishing.com

Editorial Director: Laura Rance
Email: laura@fbcpublishing.com

Production Director: Shawna Gibson
Email: shawna@fbcpublishing.com

Circulation Manager: Heather Anderson
Email: heather@fbcpublishing.com

President: Bob Willcox
Glacier FarmMedia LP
Email: bwillcox@farmmedia.com

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Congratulations!

To our March survey winner,
Larry and Terri Kraus, Gowanstown, Ont.
This month's survey is on page 58.

Cover photo: Cover photo supplied by Verified Beef Production

FEATURES

DEPARTMENTS

By Gren Winslow

GRADING CHANGES STILL ON HOLD

On January 21 the Canadian Food Inspection Agency (CFIA) published its proposed Safe Food for Canadians regulations for public comment. The overall aim is to streamline and tighten up on the regulation of Canada's food supply.

CFIA's current food safety program is managed under 13 different regulations spread over five pieces of legislation covering nine food commodities: dairy, fish and seafood, fresh fruits and vegetables, honey maple products, meat, processed eggs, processed fruit and vegetable products and shell eggs.

Currently the agency operates separate food safety and inspection programs for each of these, often under different rules, using different bureaucracies. As a result not all imported food or food prepared in Canada for export or interprovincial trade is subject to the same regulatory requirements.

The new rules will usher in a more consistent inspection process across all food commodities along with tougher penalties for infractions.

When these regulations are accepted, the Safe Food for Canadians Act, which received royal ascent in 2012, will repeal and consolidate the Canada Agricultural Products Act, the Consumer Packaging and Labelling Act, the Fish Inspection Act and the Meat Inspection Act so all food in Canada covered by the mandate of CFIA will be governed under the Safe Food Act and the Food and Drug Act.

With that will come the power to license food importers and Canadian companies preparing food for export or interprovincial trade and slaughter plants and processors. CFIA will also gain the authority to apply an international standard for traceability on licensees and require companies to establish food safety controls, which are already common practice in beef slaughter plants.

Most of these new rules will be aimed at the packers and processors in the beef sector but there are bound to be some ripples that affect cattle operations. Traceability, for example, has been in the wind for years, and producers now have a pretty good idea of how it will roll out after years of negotiating back and forth with CFIA.

Another you might not be as aware of is the change to Canada's beef grades that will show up after these new regulations come into force.

The Safe Food regulations include a provision to incorporate documents by reference to the regulation, which is a nifty way of giving an industry standard the force of a regulation while allowing it to be changed without going through all the red tape needed to amend the regulation itself.

Since beef grading is incorporated in the Safe Food regulations, the Canadian Beef Grading Agency has gotten the agreement of CFIA to reference a revised version of the grade standards for beef, bison and veal carcasses to the regulation.

This is one of the ways CFIA has come up with to streamline its enforcement of regulations, which is also going to be available to the Health of Animals Act, Feeds Act, Fertilizers Act, Seeds Act and Plant Protection Act.

There are safeguards built into this process to make sure any third-party document allows Canada to meet its international obligations, and other stakeholders have ample opportunity to review and comment on any change to the document before it is made by CFIA.

The Canadian Beef Grading Agency document proposes to change Canada's Yield Grade classification from three to five classes to harmonize it with the current USDA standard.

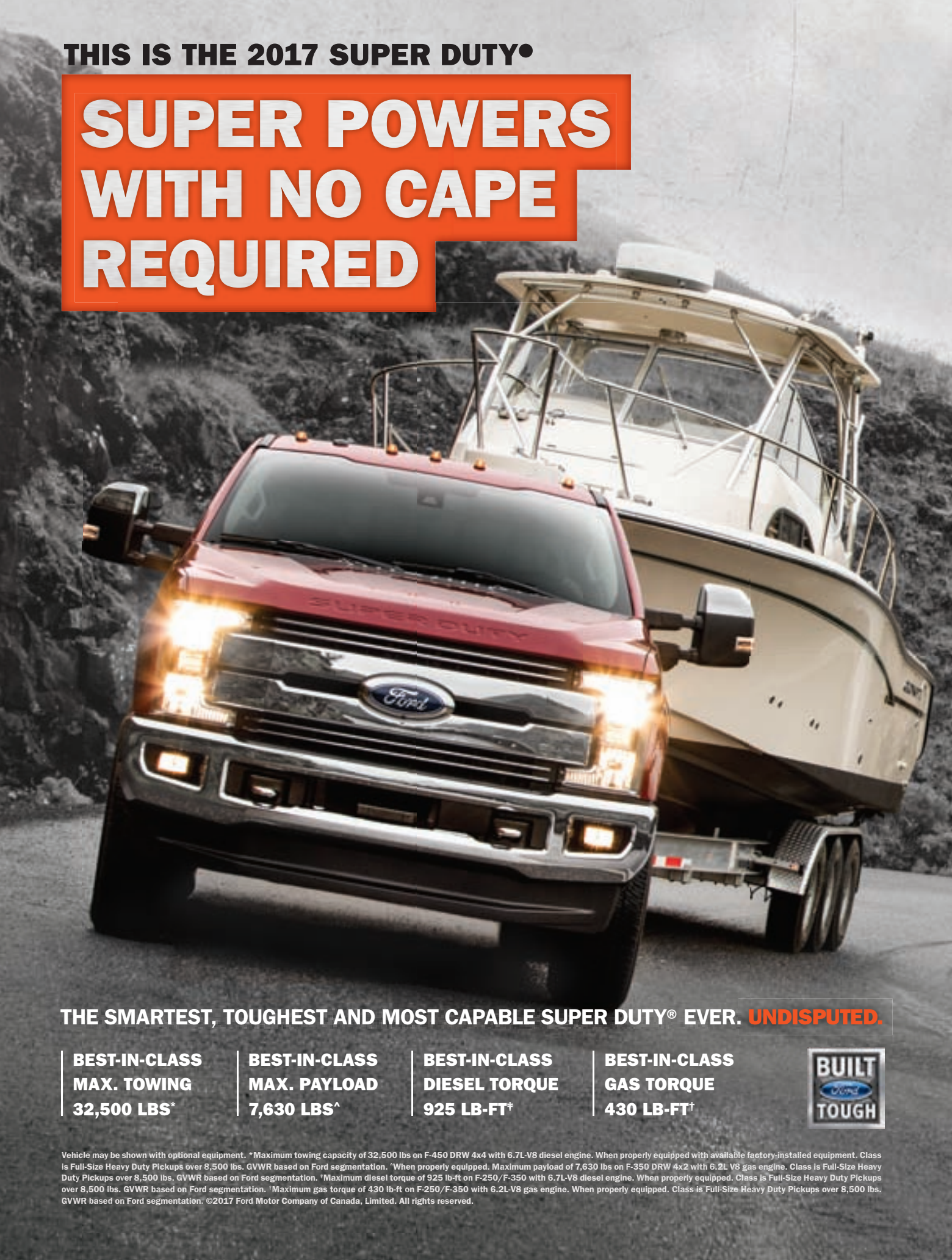
This is not a sudden decision. The agency has been trying to get a similar regulatory change through CFIA for years up to 2012 and the introduction of the Safe Food Act. A discussion paper done soon after looked at four alternative approaches that ranged from scrapping a regulatory grade in favour of an industry standard to the status quo with full government control of the standard.

In the end the agency and its industry-driven board settled on the current proposal which had the benefits of a government-backed standard plus the flexibility to make amendments so the industry could adapt to changing market conditions or take advantage of newer technology.

It also seemed like a faster track to making changes to the grading standard back in 2015 when the proposal was first put together, and the Safe Food regulations appeared imminent.

Yet here we are in 2017 waiting for a 90-day comment period to end on April 21 and possibly facing another year after that before the comments are reviewed and the final version approved. Regulation making is a painfully slow business which, when you think of it, is how we got to this point in the first place.

By the way, these grading changes are part of the new regulation and subject to comment, as well. So if you have any concerns about moving to a U.S. yield grade you've got another month or so to make your case at www.inspection.gc.ca.



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NewsMakers


Ben Fox

Ben Fox of Dauphin is the new president of the Manitoba Beef Producers. Joining him on the executive are first vice-president **Ramona Blyth** from MacGregor, second vice-president **Tom Teichroeb** of Langruth and treasurer **Peter Penner** from Winkler. **Dianne Riding** of Lake Francis replaces **Fox** as board secretary.


Ryan Beierbach

Ryan Beierbach of Whitewood returns as chair of the Saskatchewan Cattlemen's Association. New to the board of directors this year are **Joe Jackson** of Moose Jaw, who takes over from **Philip Lynn** in District 2, and **Keith Day** of Kyle, who takes over from **Larry Grant** in District 3B. **Bill Huber** of Lipton replaces **Lloyd Thompson**, Carnduff, as one of the directors representing the Saskatchewan Stock Growers Association. **Duane Thompson** of Kelliher and **Lynn Grant** of Val Marie were elected to join **Pat Hayes** and **Reg Schellenberg** as SCA's representatives to the Canadian Cattlemen's Association.


Martin Zuidhof

The Alberta Cattle Feeders Association returned **Martin Zuidhof** of Lacombe as chair and **Ryan Kasko** of Coaldale as vice-chair during its annual general meeting at Lethbridge. **Colleen Mackey** of Picture Butte was newly elected for a two-year term joining past chair **Page Stuart**, GFA committee chair **Jake Buerkert**, **James Bekkering**, **Jason Hagel**, **Craig Paskal**, **Greg Schmidt**, **Keith Ypma**, **John Schooten**, and **Jeff Smith** on the association's board of directors. **John Lawton** and **Leighton Kolk** completed their terms; however, there are no vacancies remaining as per the association's governance review recommendation to reduce the board by one member.


Ryan Kasko


Scott Sakatch

Scott Sakatch has resigned as the communications specialist with the Saskatchewan Cattlemen's Association. Sakatch is a former editer/reporter with the *Lethbridge Herald* and communications consultant who is moving to Red Deer.


Barry Irving

Barry Irving, the manager of research stations for the faculty of agricultural, life and environmental sciences at the University of Alberta is the 31st recipient of the W.R. Chapline Stewardship award presented annually by the Society for Range Management (SRM) in recognition of his contributions to the art and science of rangeland management. **Irving** teaches an advanced undergraduate class in range management that culminates in two exams at the annual meeting of the SRM; one is written exam, the other gives students one minute to identify plants at 100 different stations. Under his tutelage the U of A Range Team has scored a top-five finish 16 times in this competition against American universities and chalked up 165 awards.


Mathieu Pare

Mathieu Pare is the new director of Canada Beef's Canadian Beef Centre of Excellence (CBCE), replacing the retiring **Marty Carpenter**. A Governor General Award winner and professional chef, **Pare** has trained in Western Canada's most demanding kitchens, La Chaumiere, Rouge, Quail's Gate Estate Winery and CP Rail's The Royal Canadian Pacific. Over its first 18 months in operation, the CBCE hosted 66 domestic and international missions, from approximately 33 countries and enabled or leveraged approximately $150 million in commercial business.


Sacha and Shane Nerbas and their children Cash and Kane; Arron and Amber Nerbas and their children Emerson and Hailey.

Manitoba's 2017 Environmental Stewardship Award was presented to Nerbas Bros. Angus of Shellmouth during the Manitoba Beef Producers' annual conference at Brandon in February. The family's purebred herd is raised to perform on a mainly forage diet.

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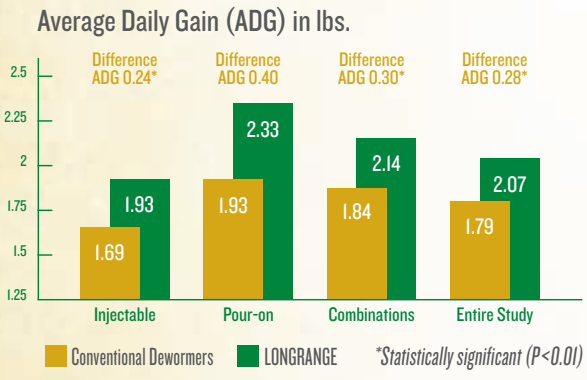

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A RANCH CALENDAR

By Bert Smith
Reprinted from the June 1950 *Canadian Cattlemen*

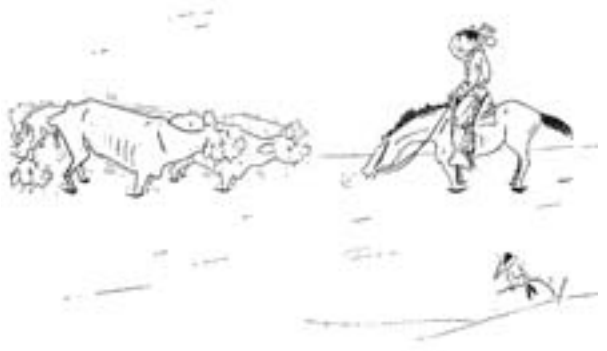
SINCE 1938

On this page is shown a ranch calendar depicting ranch scenes in-season for half the year. This series was prepared by Bert Smith, *Canadian Cattlemen* artist, and exhibited for the first time at the 54th Annual Convention of the Western Stock Growers Association, held in Calgary, Alta. on February 9 and 10, 1950.

JANUARY

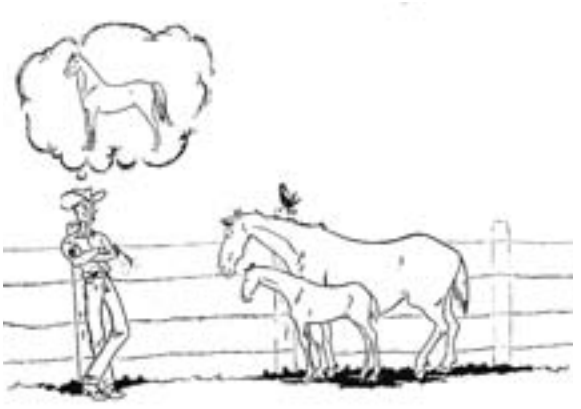
1950 CONVENTION

FEBRUARY



MARCH

APRIL



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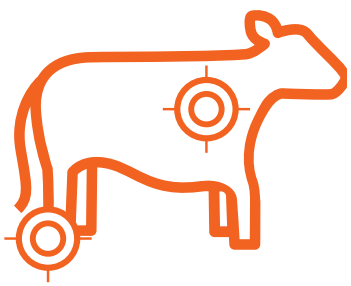

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By Lee Hart

VBP HELPS KEEP BEEF IN THE GAME

No one has to participate in the verified beef program, but consumers and the food industry are starting to call the shots

Les Johnston figures if he wants to continue to sell beef, and hopefully tap into top or higher-value markets, he needs to be able to show buyers as well as consumers he is doing a good job.

The southern Saskatchewan rancher is a believer in the Canadian Verified Beef Production (VBP) program. He was doing much of the record-keeping and following beef production practices spelled out in VBP long before the program was ever created. As the fourth generation on the family farm at Fillmore, south of Regina, Johnson says keeping and analyzing records and following sound production practices, just became a way for his family to produce a higher-quality, more efficient, more valuable animal. The Verified Beef Production program fit right in.

"To me as a producer, the value of all this is about maintaining and hopefully increasing market share," says Johnston. "It doesn't matter if you are producing beef, or selling cars, or lawnmowers, you need to produce what the customer wants. And it is a lot easier to sell a person something they want, than to try and convince them they need your product."

In today's beef market, increasing consumer

Continued on page 12

> **"To me as a producer, the value of all this is about maintaining and hopefully increasing market share."**
>
> LES JOHNSTON

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Continued from page 10

concern about animal welfare, food safety and proper environmental stewardship, and competition with other meat and vegetable protein sources makes it vital for individual beef producers to demonstrate they are following all the best production practices. It doesn't help for a producer just to know themselves they are doing a good job, says Johnston, they need to demonstrate it.

Johnston, who is also a VBP workshop leader in Saskatchewan, says the majority of Canadian beef producers do a great job of producing beef now. So it's not much of a stretch to formalize their routine beef production practices through the VBP program. Canada already has a livestock identification system in place — every animal has a tag and number. A key aspect of the VBP program is to keep proper records. Most producers today have smartphones, most have computers — useful record-keeping tools. VBP also supplies a handy pocket recordbook for writing down various treatments.

PROPER RECORDS ARE KEY

Key information for the VBP program, includes proper records about when animals are processed, what vaccines or antibiotics they receive, and how the products were administered — proper injection methods.

"This is something I've done for probably the past 20 years," says Johnston, flipping back through a recent notebook where he jotted down any days when he has worked with cattle — for his own information when, where and how many cattle were moved to certain pastures, notes on when cattle were processed and treated and what products were used. No animal that has been treated with antibiotics, for example, leaves the farm until it has passed the treatment withdrawal date. That's all very similar information that the VBP program recommends.

Over the years Johnston developed a 200-head herd of both commercial and purebred Simmental cattle. The farm started out with straight commercial cattle. In the 1970s, Johnston's father started looking at using A.I. to improve herd genetics and performance. As that program developed they began to market good quality crossbred bulls and replacement females. Eventually it evolved into two separate herds of purebred Simmental and good crossbred females.

And keeping good records just became an important management tool, he says. Genetic information, calf weights, proper herd health treatment records, market information, feedlot performance data and carcass data (when available) all became useful information on their farm in helping them produce a more efficient beef animal and a high-performing beef herd — on both the purebred and commercial side.

"And proper records do pay off," says Johnston. "You can analyze information and make better management decisions, but we just had a recent case of dealing with an Ontario buyer looking for cattle with specific production protocols. We were able to explain our production practices and back that up with our records, and within a couple hours the deal was completed. Proper management practices and good records can help you access new markets."

LONGTIME SUPPORTER

Throughout his farming career, Johnston provided input into the development of the national identification program, also helped develop the Canadian good management practices — which eventually became the Quality Starts Here program — and was an early adviser to and advocate of the BIXS (Beef InfoXchange System), which is a two-way information exchange through the beef production and marketing chain from producer to processor.

He sees these all as tools that help him improve his own beef production practices, ultimately producing an efficient and high-quality beef animal, that meets the ever-narrowing specifications processors and retailers are looking for in Canadian beef.

Nearly a decade ago, the original Quality Starts Here program morphed into the Canadian Cattleman's Association Verified Beef Production program, which not only encourages producers to use proper production practices but verifies it. Farmers and ranchers do it, and a third-party audit verifies it.

The original VBP program walks producers through standard operating procedures in key areas such as animal health management, feed and water, cattle shipping and handling, pesticide control, manure management, and proper on-farm training and communications of these procedures. The most recent version of VBP is called VBP+. Along with the above practices it also brings in other modules covering increasingly important beef production procedures such as on-farm biosecurity, animal care and environmental stewardship.

TWO-STAGE VBP PROGRAM

The VBP program is a two-stage, work-at-your-own pace program. The first step: a producer gets trained in the VBP program. In many cases they can attend a local two to three-hour workshop explaining the program (it can also be explained online). From there they can work through the program and manuals at their own pace. Once they have gone through the material and begun documenting production practices with proper records, the second step is to call for a farm audit. That involves an on-farm visit by an independent beef industry auditor to have a look at the operation, review records and ensure production practices are in place. VPB operates on an eight-year cycle. The program requires one full on-farm audit along with an annual assessment, which is either a records review or a self declaration. All farms are open to a random audit at any time.

In some provinces, registering for VBP program also qualifies a producer to access federal and provincial cost-sharing funds under the Growing Forward 2 program. It can help cover the cost of some materials and equipment related to VBP requirements such as extra restraints for cattle squeezes such as neck extenders, head and shoulder holders; help with the cost of record-keeping software; and cover half of the cost of the full $500 on-farm audit.

IT'S ABOUT STAYING IN BUSINESS

While completing the VPB program does require some time, Terry Grajczyk, national program manager, says many producers are already well on their way there — it is just a matter of formularizing the record-keeping practices they are already using. "And many producers over the years have already participated in on-farm food safety, environmental farm plans or other programs," says Grajczyk. "And much of the work they've done there can just be rolled into VBP."

Both Johnston and Grajczyk say there is no threat to complete the voluntary VBP program, but there is a reality.

Grajczyk says demonstrating or "verifying" practices about proper animal care, good environmental stewardship, and proper biosecurity and food safety protocols have always been important, but are becoming even more important in terms of

"maintaining a social licence and protecting our ability to farm," she says. "Many aspects of the VBP program are low cost or no cost, other than taking a bit of time. But it demonstrates leadership in the beef industry. And leadership simply means being aware of what can be done, doing what's right and helping those who don't know to pull up their socks when they need to."

Johnston says it is about staying in business. "Markets and consumer (retailer) trends are changing," says Johnston. "Over the past 20 to 30 years the Canadian beef industry (with limited budgets) did very little to market itself to consumers. We relied on retailers and restaurant chains to tell consumers about the quality of Canadian beef. And now we are seeing some restaurant chains, retailers and competing protein sources that are raising doubt in the minds of consumers — "should I be concerned?"

"As beef producers we have to get behind any initiative we can that not only helps us to improve our production practices, but also shows the world we are doing a good job," he says. "The Verified Beef Program goes a long way to meeting the objectives of the Canadian Roundtable for Sustainable Beef. And a sustainable beef product is something that consumers, retailers and the food industry are interested in. The Canadian beef industry has had tremendous support from restaurant chains such as McDonald's restaurant for years. McDonald's is the largest customer of Canadian beef in Canada, but they want a quality product from a sustainable industry. I predict the day will come anyone not producing beef under the VBP program won't be able to sell to McDonald's, and other retailers will follow."

For more information on the VBP+ program visit the VBP website at: verified-beefproductionplus.com/ where you will also find links to provincial VBP offices and co-ordinators.

Lee Hart is a longtime agricultural writer based in Calgary and contributor to Canadian Cattleman Magazine. You can reach him at lee@fbcpublishing.com.

By Roy Lewis DVM

PHOTO: COLORADO STATE UNIVERSITY

MECONIUM STAINING OF NEWBORNS IS A RED FLAG

As a veterinarian over the past 35 years I've been called many times to assist with difficult calvings or malpresentations that resulted in meconium (first manure) stained calves.

The jury is still out on what causes this and what we should do about it. Veterinarians have many opinions on this topic, as it is a difficult subject to study.

My intention here is to give some of my ideas on meconium staining and let you form your own opinions.

Whenever we see a meconium-stained calf we must assume it has been under some stress and the birth was delayed for some reason that may or may not be under our control.

That is why meconium-stained calves are very common with malpresentations, torsions and even large calves. Normal calving should have taken place sooner and with the added stress the meconium is expelled, mixes with the uterine fluids and stains the calf.

When most farmers see the meconium they recognize that the birth has been delayed but I am not sure if they also associate it with stress on the calf.

If one sees a number of these calves, it may be a sign that you are delaying your calving assistance for too long, or there are no recognizable signs of labour early enough. Either one may indicate other problems.

Nutritional issues such as low-grade calcium deficiencies can lead to the lack of uterine contraction and delayed parturition.

Every time we move cattle into the barn and delay the return to full-fledged pushing there is the possibility of a delay in parturition and a meconium-stained calf.

A stained live calf is also a warning sign that we may need to give that calf special attention.

Calves from delayed births can suffer varying forms of anoxia, potentially making them slow to stand and nurse and more susceptible to calfhood diseases including pneumonia, scours and navel infection. So it may need supplemental colostrum sooner rather than later.

Remember, it can be the first case that starts the outbreak so we should provide a bit more TLC to ensure the survivability of these meconium-stained calves. For that reason it's a good idea to mark down in your calving records "calf meconium stained." A majority of these calves will do very well with no additional care but the warning sign of meconium staining is trying to tell us something so observe them closely.

Seeing yellow fetal fluids even in the waterbag tells us that there is meconium staining, so time is of the essence and I would have no hesitation to help with the birth of that calf.

The yellow fluid may also suggest you are

dealing with a backward calf or breech birth, since the straining and pressure on the back end of the calf will almost certainly facilitate the expulsion of meconium earlier than normal. So the yellowing of the fluid is suggesting we examine the dam sooner in the birth process which, in the case of these types of malpresentations, may avert a stillborn calf.

Even though one works efficiently and diligently at assisting, the meconium-coloured fetal fluid makes me as a veterinarian work a little bit quicker than normal. We probably see more of these calves as time has elapsed between when the farmer identifies a problem, checks it out himself and then calls us and we arrive, or the calving takes place at the clinic.

I don't know if the volume of meconium indicates the degree of stress, since I have seen some heavily stained calves that were very lively and others barely stained which were very weak and lethargic. Meconium may warn us ahead of time to be ready to use some resuscitation procedures such as the straw up the nose, cold water in the ear, or a respiratory stimulant such as RespiSure (available by prescription). Supplemental oxygen, if available, should be on hand to help revive slow calves.

The final decision on what to use comes down to the susceptibility to either a meconium-aspirated pneumonia or perhaps a higher propensity to contract navel infection. The jury is out on this one and while we don't generally have problems with meconium-induced aspiration pneumonia, I have seen it diagnosed several times over the years, so I am always cautious and if the situation warrants it I prescribe a course of antibiotics.

This spring think of meconium as an early warning sign of many things

This will depend on the advice of your veterinarian but next time a meconium-stained calf is delivered at calving season I think it is well worth asking the question.

I have followed up many of these cases over the years and in every case where antibiotics were prescribed the calf had no further treatment. In today's world of prudent antibiotic use one must weigh the likelihood of getting sick, meaning further antibiotic would be required.

The meconium is considered pretty sterile but aspirating it can cause damage to the lungs and predispose the calves to sickness.

This spring think of meconium as an early warning sign of many things, and a good indicator that the cow has been in labour too long. Additional care may be needed for both the cow and calf.

Your veterinarian may even prescribe NSAIDs in certain situations to help the calf and cow along. I truly believe all these additional efforts will lead to a healthier calf and, subsequently, a healthier herd and give you some peace of mind.

Very little has ever been looked at in regard to this topic at calving time.

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

By Dr. Susan Markusa

YOU JUDGE THE HEIFERS!

Part 2

It's been said that the most powerful selection strategy for beef cattle is possible if both performance data and genetic data are available. However, only after we receive proof of their performance either in carcass results or replacement breeding offspring will we truly be able to believe that. It's all about the accuracy of the technology. While the technology is certainly accurate for the purebred sector, we have questioned it in our crossbred sector when historic breeding data, genotypes and pedigrees are not available. It seems there is lots of value in the data we can generate using current genomics technology, so we are putting it into perspective for the commercial rancher.

Last issue, we showed photos of four bred heifers with basic growth and performance data. Here are those heifers (currently safe in calf) with additional actual performance information that helped us to rank them. The largest tradeoff we made was to value feed efficiency more than rib-eye area because the feed cost savings for such a female in a herd for many years outweighed the carcass performance as we could get improved carcass traits by mating her to a stronger bull — assuming she had better than average carcass traits.

Heifer 412 is a feminine heifer that is appealing for her angular side view, clean shoulder and high ADG performance. Being the lightest heifer in this group at 995 lbs. we'd expect her to be at least a 1,200-lb. mature cow — perfect for most range conditions. Her superior feed efficiency with a residual feed intake (RFI) score of -0.46 kg (based on her dry matter feed intake of 6.13 kg/day adjusted for her weight and backfat) makes her the most feed-efficient animal in this group.

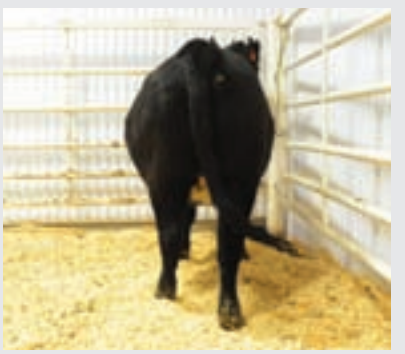
Heifer 109 has appeal due to the width over her topline and she also visually carries a natural fat cover making her appear an "easy-doer," but might have a coarser front end and shoulder than ideal. However, her

TAG #447

Tag #447
Sept. 30, 2016, wt. 1,030 lbs.
Birthdate: Apr. 28, 2015
190-d weaning weight: 515 lbs.
Start test weight: 781 lbs.
End test weight: 875 lbs.
ADG on test: 1.65 lbs./d (0.75 kg/d)
RFI: +0.38 kg DM
Backfat: 0.67 cm
Rib-eye area: 57.6 cm2

Notes:

TAG #412



Tag #412
Sept. 30, 2016, wt. 995 lbs.
Birthdate: Apr. 28, 2015
190-d weaning weight: 510 lbs.
Start test weight: 759 lbs.
End test weight: 864 lbs.
ADG on test: 1.85 lbs./d (0.84 kg/d)
RFI: –0.46 kg DM
Backfat: 0.72 cm
Rib-eye area: 56.5 cm2

Notes:

feed efficiency with an RFI score of -0.23 kg DM makes her a feed cost saver.

Heifer 134 has a lot of appeal with her straight topline, deep body and muscling throughout. She has the most backfat and the largest rib-eye area with great topline width. However, her feed efficiency RFI score of +0.20 kg DM makes her less feed efficient than our average heifer. Heifer 447 doesn't have as much appeal from the side view as she lacks depth and width through her hind end. She carries less backfat and appears narrower across her loin for her size. With an RFI of +0.38 kg DM/d she is the most feed inefficient heifer in this group.

Based on phenotypes (performance under the given management conditions), the top three heifers are 412, 109 and 134 with the bottom heifer being 447. With crossbred heifers, we're not so concerned about picking the top or winner, rather we're looking for a group of good heifers and the ability to cull the poorer ones based on sound economics.

When we assign economic weights to their valuable growth traits in order of importance (ADG, weaning weight and backfat) based on only genomic prediction assessments (which we have not shown here due to space limitations), the heifers rank top to bottom as 109, 412, 447 and 134. Clearly 134 was the bottom in this case, with 447 not far behind. After all the data is analyzed and we consider both the actual data with the genomic predictions, we conclude the top two heifers are 412 and 109 with the bottom two are 134 and 447. Genomic predictions and actual phenotypic results can only be used within the group we are comparing, so while we can't compare this group of heifers to another group, it does help us rank the complete herd of 50 head for our own in-herd use.

Because these commercial heifers are predominantly Angus breed types, there is an advantage to crossbreeding them to optimize heterosis to capture an additional 10-15 per cent or more performance from their offspring. We might be losing opportunity if they were bred back to a purebred bull of their same breed, so there is value in seeing what breed crosses they are comprised of based on their DNA.

They were all sired by a purebred or near-

Continued on page 18

Continued from page 17

purebred Angus bull (98%+ Angus) so with a simple formula, we are easily able to determine the retained heterozygosity (RH), a metric for hybrid vigour, of their dams and themselves.

412's dam was 44 per cent Angus, 41 per cent Hereford and eight per cent Charolais, giving 412 an RH value of 43 per cent.

109's dam was 63 per cent Angus, 23 per cent Hereford and 13 per cent Simmental, giving 109 an RH value of 32 per cent.

134's dam was 83 per cent Angus and six per cent Simmental, giving 134 an RH value of 16 per cent.

447's dam was 73 per cent Angus and 15 per cent Hereford, giving 447 an RH value of 24 per cent.

Each 10 per cent increase in genomic-based retained heterozygosity improves feed efficiency by 0.067 kg DM/day in this group of 50 Lakeland College heifers. Other herds have seen similar results in feed efficiency improvement based on increasing RH. In addition to improvements in feed efficiency, we also know that increasing retained heterozygosity improves fitness traits like longevity and reproduction — traits we definitely value in our breeding herd. Obviously, colour alone isn't a sure way to assess breed composition.

So, if we use all this data we will be watching 447 and 134 for performance due to their growth and feed inefficiency compared to the other heifers. Because these are not the bottom of the complete herd of 50 head we won't be culling them just yet. We will also want to consider breeding these heifers, as two-year-olds, to a bull other than Black or Red Angus to optimize heterosis, especially heifers 109, 134 and 447 with the lowest RH percentage.

Genomic tools and calculations have enabled us to make breeding decisions we may not have otherwise considered for this group of heifers. Performance records, feed efficiency testing and determination of breed composition should allow this herd to increase their offspring's performance in a way that has a direct impact on profitability.

This is year one of a multi-year project at Lakeland College with their new Student Managed Farm (powered by New Holland) livestock research unit and these students are well into examining data with potential for economic impact in commercial herds.

Dr. Susan Markus is a livestock research scientist with Alberta Agriculture and Forestry in Stettler, Alta.

TAG #134

Tag #134
Sept. 30, 2016, wt. 1,060 lbs.
Birthdate: Apr. 28, 2015
190-d weaning weight: 561 lbs.
Start test weight: 857 lbs.
End test weight: 949 lbs.
ADG on test: 1.63 lbs./d (0.74 kg/d)
RFI: +0.20 kg DM
Backfat: 0.81 cm
Rib-eye area: 66.2 cm2

Notes:

TAG #109

Tag #109
Sept 30, 2016, wt. 1,095 lbs.
Birthdate: Apr. 28, 2015
190-d weaning weight: 504 lbs.
Start test weight: 839 lbs.
End test weight: 932 lbs.
ADG on test: 1.63 lbs./d (0.74 kg/d)
RFI: –0.23 kg. DM
Backfat: 0.72 cm
Rib-eye area: 56 cm2

Notes:

By John McKinnon

MORE QUESTIONS ON MINERAL NUTRITION

John McKinnon is a beef cattle nutritionist at the University of Saskatchewan

Last month I had the opportunity to attend the Saskatchewan Beef Industry Conference. As with similar events held across the country, the objective was to transfer current research and technology to beef producers. One of the most interesting aspects of this conference was a bear-pit session hosted by the Beef Cattle Research Council which focused on reproductive rates in spring calving cows. This session addressed the question: "Were producers who had moved to later calving experiencing a drop in their pregnancy rates?" What really got my attention was when the discussion turned to trace minerals. While I was not surprised to hear that trace mineral deficiency is associated with open cows, I was surprised about the wide range of questions and to some extent the confusion that producers had with respect to trace mineral nutrition. Questions included:

- What is the trace mineral concentration of tame and native grasses and how valuable are they in meeting requirements?
- What is the role of sulphur and molybdenum in copper deficiency?
- What is the appropriate level of individual trace minerals for my mineral supplement and what form of minerals should I purchase?
- Do I need to feed minerals year-round?
- My cows will not eat mineral or they will not stop eating mineral — what can I do?

I suspect that these questions are not restricted to those present at this meeting and it would be a worthwhile use of this and next month's column to answer these questions for a wider audience.

Let's look at the question regarding trace mineral concentrations in tame and native forages and do they meet the animal's requirements. Levels of minerals in a given forage will depend on a variety of factors including soil type, plant species and stage of growth, weather, and forage management. While we can make generalizations as to approximate levels, the only way to know for sure is to have your forages analyzed. More importantly, as a nutritionist, I am not sure that copper or zinc levels in your forage are all that important. I say that because absorption of trace minerals from the gastrointestinal tract of the animal is extremely poor and in some situations non-existent. For example, only about five per cent of copper in forages fed to mature cattle is absorbed, regardless of forage source. Combine this with copper antagonists such as high sulphate in water or high molybdenum forages and copper absorption from the diet is essentially zero! A similar situation exists for manganese and to a lesser extent zinc. This poor absorption of trace minerals is the reason why dietary requirements are set significantly higher than the actual requirement of the animal.

Another question that arose related to the concentration of a given mineral — what is the optimum level? When you look at the vast array of minerals on the market and the range in their formulations, it is not surprising that confusion exists. The answer to this question lies in the mineral tag. Trace mineral levels are typically listed on the tag as milligrams per kilogram (mg/kg) or parts per million (ppm). Adequate intake of a specific mineral such as copper will depend on its concentration in the mineral supplement and the expected intake listed on the tag. For example, take two mineral supplements, one that contains 3,000 mg/kg and one that contains 1,000 mg/kg of copper. If expected consumption is 70 grams per day (i.e. 2.5 ounces), an animal will consume approximately 210 milligrams of copper with the first mineral and only 70 milligrams with the second. The first mineral consumed at targeted levels will meet copper requirements of most cattle; however, the second mineral will likely result in a copper deficiency, particularly if there are issues with high-sulphate water or high-molybdenum forages. Understanding your mineral tag is critical to selecting the right mineral. Don't just look at the price tag!

I have already alluded to the fact that certain dietary constituents such as sulphur and molybdenum can interfere with trace mineral absorption, particularly copper. High levels of these antagonists can lead to a secondary copper deficiency and result in open or late breeding females. Having your water tested for sulphate content and forages for their molybdenum content are important steps to take before deciding which mineral is right for your herd and can be used as diagnostic tools in cases of trace mineral deficiency.

Trace minerals can be purchased as inorganic or organic minerals. Inorganic minerals are most common and include chemical complexes with oxides, chlorides and sulphates (i.e. copper oxide versus copper sulphate). Complexes with sulphates tend to be more available than those with oxides. Organic minerals are also referred to as chelated minerals and are complexed to protein or amino acids or natural forms such as yeast-based minerals. The form of the mineral will have a large influence on the price as well as the effectiveness of your mineral program. Inorganic minerals while cheaper are not absorbed as effectively as chelated minerals and thus are not as effective in eliminating a deficiency.

Next month, we will look at the need for year-round mineral supplementation, when you should feed chelated minerals and that tricky question, how to regulate mineral consumption.

By Steve Kenyon

The blue trough is on a continuous flow out of a dugout with a timer on 110-volt power.

CHEAPER TO PUMP WATER THAN HEAT IT

Winter water was a very hot topic last month so I thought I would share with you how I supply my cattle with water in the dormant season. I am not afraid to allow my cattle to lick snow, but I have learned from the past to make sure that I have something planned for when we have a lack of snow. It always seems to happen for at least part of our winter here in Alberta.

Each winter I usually have some version of a continuous-flow water system running for my animals. I learned a long time ago that it is cheaper to pump water than it is to heat water. We live off-grid and it is very noticeable every time you plug in anything that produces heat. The generator sure grunts.

About 10 years ago, I read an article about a continuous-flow winter water system. I was very excited to try it and I have been using one form or another ever since.

I have worked with a few different grain farmers over the years, swath grazing or residue grazing, which means I am always winter grazing in different locations. In most cases, there are no water bowls already conveniently set up and running for me. But in my area, there is usually a dugout or a water body of some kind on every quarter so I have to come up with some type of winter water system.

A true continuous-flow system will pump water from a water source up into a water trough and then have the water return to the water source 24/7. If the water is always in motion, it does not freeze. The warmer water from under the ice is pumped up to the trough, which keeps the trough from completely freezing up. This system should only be used with an unpotable water source like a dugout or a wet well.

To set this system up I need a few components. The first thing is a power source and an extension cord. If I have 110-volt power, that's great, but if not a small generator will work; 2,000-4,000 watts will usually do the job. I will need a submersible 110-volt sump pump and a length of 1.5 inch or larger in diameter water line from which I remove or disconnect the float switch. I will also need four square straw bales and a water trough of some kind. I usually install heat tape, just in case I need it later in the winter.

I try to pick a location along the edge of the water source with a bit of a slope down to the water. If it is too flat, you might have problems when the ice builds up later in the winter.

Set the water trough so that when it overflows, the water will run out the back of the trough away from the cattle and down towards the water source. Pick a spot off to the side of where the trough is set and cut a hole in the ice about 1.5' x 1.5' as the inlet hole. Make sure it's far enough out into the water to allow for the water level to drop and the changing thickness of the ice. If you are too close to the edge, the system will not work for very long as the winter progresses.

I cut another hole in the ice directly below the trough to return the overflow. Without the return hole, the water will flow on top of the ice and continue to build up as it freezes.

I then attach the pump to the water line and slip the pump down through the hole. Of course the electrical plug to the pump still has to be above the ice. I set the bales over the inlet hole with the water line squeezed between them. I usually tie the cord to the bales to prevent it from slipping down into the water. The water line will run up to the trough and either pump into the bottom of the trough or over the top.

You need to make sure that the slope of the water line allows all of the water to drain back when the pump shuts off or the line will freeze. This is where I add the heat tape. Wrap it around the hose right at the water level just in case it freezes up.

You can have the heat tape plugged in all of the time or just plug it in if the water line freezes up on you.

The heat tape is a backup; once everything starts to freeze it is quite difficult to troubleshoot problems in winter. I place another two bales over the second hole to prevent it from freezing up so the overflow water can drain back into the water source.

If you have 110-volt power available, you can plug in the pump and let it run 24/7. This year I added a timer to the system that's currently set to turn the pump on for 15 minutes and off for 45 minutes. Should it get really cold, I'll bump it up to 15 on and 15 off.

With the holes insulated by the straw bales and whatever snow has accumulated, we can safely shut off the pump for short periods of time without it freezing at the water level. This should reduce your pumping cost and extend the life of your pump compared to a continuous flow. Either way, it's still cheaper than heating water.

If I do not have access to 110-volt power, I can still make this system work with a generator. I set everything up the same way, except that I pump continuously until the generator runs out of fuel. Each day I add a bit of fuel to run the pump for a few hours.

The cattle have access to the water for as much time as the fuel I add. With this system the pump is off for a much longer period of time so the straw bales have to be well sealed to keep the holes from freezing over during the night.

The heat tape is needed more in this situation to keep the water in the line from freezing where it enters the water.

When I start up the generator I may run it for a while with the heat tape on to thaw the line before I plug in the pump.

I've also thawed the line by pushing it under the water about a foot to thaw the small plug in the line that froze overnight. Usually it takes 15 or 20 minutes to thaw.

I have run a continuous-flow system out of a drilled well in the past, as well. A drilled well is a potable water source so you should never allow any back flow to go down the well to avoid contamination.

Many would argue this is a waste of water, but I say heating a water bowl is a waste of electricity.

In this situation, I again set the trough up on a hill and allowed the water to flow downhill away from the cattle. This system was run with a pressure system controlled by a regular summertime float valve. The only difference was that just before the float valve, I drilled a small hole in the fitting so when the float value shut off, a small volume under high pressure continued to flow through the hole. This stirred the trough, and when the cattle were drinking, the valve opened and we received the water faster.

These are just a couple of ways to set up a continuous winter water system. I do have a video and some pictures of these systems on our Greener Pastures Ranching Facebook page. I know a picture is worth more than 1,376 words.

Steve Kenyon runs Greener Pastures Ranching Ltd. in Busby, Alta., www.greenerpasturesranching.com, 780-307-6500, email skenyon@greenerpasturesranching.com or find them on Facebook.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By Debbie Furber

FACING UP TO PAIN

Meloxicam brings comfort to cattle and producers

It pays to control the pain, according to the producers we contacted.

No ifs or buts about it, producers who used meloxicam to ease the discomfort of branding, castration and other routine procedures on young calves in the past plan to use it again this spring.

Meloxicam is a non-steroidal anti-inflammatory drug (NSAID) to reduce inflammation, pain and fever, and fortunately Canadians now have three long-acting meloxicam products available for use in cattle. So far, none are registered in the U.S. for cattle.

Boehringer Ingelheim's "Metacam 20 mg/ml Solution for Injection" (subcutaneous or intravenous) was approved in 2009 for calves over one week of age to improve appetite and weight gains at the onset of diarrhea, and for pain relief when removing horn buds in calves less than three months of age. In 2013, it was approved to treat inflammation and pain associated with acute mastitis and in 2016, for reducing pain associated with abdominal surgery, such as Caesarean sections in cattle.

Meloxicam Oral Suspension by Solvet, a trademark of Alberta Veterinary Laboratories in Calgary, was licensed in late 2015 for the relief of pain and inflammation up to 56 hours after surgical and band castration of cattle. The medication is placed at the back of the tongue via a dosing syringe on the bottle.

Brand new from Merck Animal Health is Rheumocam Injection Meloxicam 20mg/ml (subcutaneous or intravenous) for pain when removing horn buds from calves less than three months of age and as an aid in improving appetite and weight gain when given at the onset of diarrhea in calves over a week of age.

For each claim, Jeff Estabrooks, the bovine/equine business unit director of Boehringer Ingelheim Canada, says the company must prove there is pain, how much meloxicam mitigates the pain, and for how long.

As a result, he says the introduction of Metacam to Canada in large part was due to mostly Canadian research that provided consistent ways to measure pain in cattle.

"There were the early adopters who saw the benefits right away and, absolutely, now we are seeing interest and uptake by beef and dairy producers increasing right across Canada," he says. This mirrors a similar increase in the use of pain mitigation products for swine and sheep.

"I think the beef code of practice has had a huge impact and now producers are asking their vets about pain management instead of vice versa," he says.

All the research and open discussion surrounding pain mitigation contributed to a much greater understanding of how beef cattle experience pain leading up to the release of the updated Code of Practice for the Care and Handling of Beef Cattle in 2013.

Alberta Veterinary Laboratories co-owner Dr. Merle Olson says feedback from veterinarians and producers has been overwhelmingly positive since the launch of Meloxicam Oral Suspension in the fall of 2015.

In addition to Rheumocam, Merck Animal Health has also released Banamine Transdermal (flunixin meglumine), a pour-on NSAID applied once a day along the topline for quick reduction of fever associated with bovine respiratory disease. Banamine Injectable (intravenous only for cattle) remains available as well.

There are other short-duration NSAIDs from the flunixin meglumine, aspirin and ketoprofen classes licensed in Canada for cattle. Your veterinarian will be able to suggest the most appropriate product for your intended use.

PRODUCER EXPERIENCE

Mark Vermeulen, whose family has a commercial and purebred herd near Ceylon, Sask., used meloxicam for the first time at branding last spring on all castrated calves.

"When we went out to check a few hours after, we purposefully watched for a difference compared to other years. We saw that the calves seemed comfortable. They were moving around more and following the cows instead of lying around here and there," he says.

He heard about meloxicam from producers who had used Metacam at branding the year before. His vet suggested the oral product and he liked the needle-free idea, in part because it would be a safe way for younger crew members to learn from experience. It was easy to give and he was satisfied that the calves received an effective dose because the product did what he expected it to do.

Ross Macdonald, 98 Ranch near Lake Alma, Sask., raises purebred and commercial cattle and has been using meloxicam in one form or the other for routine calf procedures since 2014. Going by the promotional material initially, it sounded like a product that could target the problem of those few calves feeling stressed, just standing in the corner of the branding pen swishing their tails at the end of the day.

"I'm happy because those 20-odd calves aren't there any more. What I really like is the longer-term effectiveness. This has huge appeal for me because we brand right in peak grazing season and it's nice to see those calves up and walking away," he says.

Macdonald also uses meloxicam when branding yearlings and for any other procedure that is somewhat invasive or could cause discomfort.

"I conscientiously strive to be better and do better for the cattle and people working with the cattle. The reality is that castrating leaves us vulnerable to criticism just based on calf behaviour at the end of the day. With meloxicam, people see we've dealt with it."

He sees the day not far off when use of pain medication will be a point of product differentiation for marketing. Already protocols for some branded beef programs ask for it and at least one he knows of has made it a requirement.

Chad Ross knew he had a good thing going with meloxicam after Solvet field rep Larry Frischke, demonstrated its use on a group of 150 calves at branding last year. The next day, some of the calves were playing on the hill just like any other normal day on the Ross L-7 ranch near Estevan, Sask. Encouraged by these results, they used oral meloxicam for the remaining 1,500 or so calves at branding.

"I liked it enough that we used it when we gave the boosters in October. We bring them home, vaccinate the cows and the calves, then turn the pairs back out on pastures. The vaccinations can make them feel feverish and shivery and it's a stressful time to start with because of the move and the weather can be so changeable. I think I will continue with this as well," he says.

On the feedlot side, all of the purchased calves received meloxicam with their vaccinations for the same reasons. The positive effect was very noticeable for calves that had to be dehorned and/or castrated because they were up eating at the bunk with the rest of the calves. They have since been using meloxicam along with the antibiotic prescribed in their protocols for treating health conditions in feedlot cattle.

"It's a feel-good thing for us, too," Ross says. "I think it will help with consumer perception if they see that we are doing the best we can for our livestock."

Consumer perception was also on Daniel Doerksen's mind when his family first tried meloxicam at branding in 2015 for all calves at Gemstone Cattle Co., near Gem, Alta.

"It helps us tell our story. We can say this is what we need to do and this is how we mitigate pain," Doerksen explains.

True to what other producers had told him, the meloxicam products haven't disappointed in the two years they've been using them. "The calves look like they are relaxed, not under duress, lying around, standing with humped backs or swishing their tails," he says, adding that he is expanding use of meloxicam to procedures on older cattle and in conjunction with other treatments for health conditions such as footrot.

It seems to him that use of meloxicam at branding is becoming more commonplace in the region. Of the brandings he helped with in 2015, theirs was the only one where meloxicam was used, whereas it was used at about half the brandings he went to last year.

Loren Rodvang, near Coronation, Alta., noticed a similar trend in his area with a lot of neighbours using Metacam for the first time last year on word of positive results from producers or suggestion by the local vet.

He decided to put Metacam to the test in 2015 by giving it to all bull calves in their 500-head herd after hearing from his vet that people using it for procedures on young calves were noticing a difference for the better.

"This wasn't a scientific study, but we are very sure we saw the calves lay around for less time and get back to work more quickly," he says.

Glancing through the ranch's health records he can confidently say that they have

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been using Metacam regularly since then, not only at spring processing but for heifers assisted at calving, and when calves get sick because it seems to make them feel better so they start eating and recover faster.

Near Lacadena, Sask., Tamara Carter says they initially used Metacam for cows and heifers after difficult calvings. Seeing it made them more comfortable, in 2013 she asked her vet if it could help reduce pain for calves at processing. One group of 30 calves had already been processed, so the bull calves in the second and third groups were the first to receive Metacam.

"We were surprised at how much faster they were paired up and nursing. It was a very noticeable difference from what we were used to seeing when they would spend a couple of days lying around. We were convinced right after that and used it for the steers in 2014 and 2015. Last spring, we included the heifers as well," Carter says.

Problems with post-surgical scrotal infections because of lying around and with the occasional orphaned calf that would lie down in the bush and be left behind have disappeared since they've been using Metacam.

She believes that reducing discomfort and stress may help the calves' immune systems stay stronger, improving overall health and potential weight gain.

"We noticed our weaning weights on the steer calves went up from 509 (in 2014), to 530 (in 2015) to 576 pounds last fall. Everything else has been the same — the same bulls and pastures, calving, turnout and weaning times every year. Could pain control be making the difference? We don't have proof, but it is a solid observation.

"I see no negative or reason not to use it. It is good for the calves and the producer. It reassures our customers and the public that we are taking every step to acknowledge and manage pain," she adds.

Sue Giles says they are thinking that the bump in weaning weights on their calves last fall could have been due to their use of pain medication at branding, although 2016 was the first year they had tried it.

Their vet at Brooks, Alta., suggested trying Meloxicam Oral Suspension for their first branding last spring because it was a group of 380 very young calves to be let out afterward into a 600-acre pasture. She was open to the idea, having used Metacam with great success treating cattle for pain from injuries and treating calves with scours.

"Amazing" is how Giles describes the response of young calves to oral meloxicam and they carried on using it for the rest of the calves, approximately 950 in all.

In past years, they would spend two days making sure the calves were mothering up. Last year, not one needed assistance and that time-saving alone was enough for her to say it definitely paid for itself.

Others helping at their brandings didn't complain at all about the additional step and ended up using it at their own brandings because they knew about the positive results.

Kim and Jack Hextall near Grenfell, Sask., were a bit worried that their branding crew might think giving pain medication was just one more thing that would take extra time when Larry Frischke offered to demonstrate oral meloxicam at their branding last spring. They were pleasantly surprised when people called afterward to get their opinion on how it worked and if they'd use it again.

The answer is a double yes. Adding pain medication didn't slow down the process. Afterward, the calves acted normal in every way with no signs of stress. They were mothered up and those lying down would stand and stretch as usual when approached the next day.

The Hextalls are on the same page when it comes to trying new technologies with potential to benefit animal husbandry because they have always seen animal care as being very important for their 300-head commercial and purebred herd.

Leighton Kolk takes a similar approach. He sees pain management as another step forward in doing a better job for animals and people at his family's farm near Iron Springs, Alta., where they run a 20,000 head capacity feedlot operation, 275 mother cows plus field crops.

They have used local anesthetic for surgeries for 15 years and have made use of anti-inflammatory drugs to alleviate discomfort; however, those products require time and special training to administer.

When the easy-to-use meloxicam products came along, he was quick to bring them on board. For the past five years they have regularly used meloxicam for any painful process, bloat operations, difficult calvings, prolapse repairs, castrations and removing damaged horns.

Generally they see that cattle of all ages benefit from the use of meloxicam, but was particularly impressed at the results when castrating 600- to 800-pound calves. Previously it took five days for them to get back on feed, so they had to be grouped separately from the other calves for two weeks. With meloxicam, they might be somewhat uncomfortable for a time, but are up at the bunk and eating the same day. The meloxicam lasts about three days and the calves often return to their home pen a week earlier than before.

Douglas Lake Ranch cowboss Stan Jacobs says they thought of using Metacam at branding for several years before they first tried it. They had wondered if it would really make a difference, and if it was economically feasible for a herd this large. Today, the ranch runs 10,000 mother cows and 2,000 first-calf heifers at its Douglas Lake and Williams Lake locations.

"What really prompted us at the time was the Boehringer Ingelheim rep offered to help us find out," he recalls. In 2014, they tested Metacam's effectiveness on small groups of calves. The first 250 calves were vaccinated, branded, dehorned and castrated as usual. The second group received the same treatments plus Metacam and were marked with a dot on the back.

"The difference was remarkable," says Jacobs. "Even coming out of the hold, the calves that received Metacam mothered up and over the hill and away they'd go. Since that day we have been using it for all of our calves. Anyone could see the results and they do justify the cost."

The extra manpower needed was a very insignificant part of the cost. Their vaccination caddies now include four syringes instead of three and not much time needs to be spent refilling the Metacam syringe because the dose is small.

Kolk Farms and Douglas Lake Ranch were featured along with several researchers and veterinarians in the Beef Cattle Research Council's video, What Producers Need to Know About Pain Control. It and the webinar recording, Practical and Effective Methods of Pain Control, and other resources on this topic can be found at www.beefresearch.ca/pain.

By Nigel Caulkett DVM

DO CATTLE FEEL PAIN THE SAME WAY WE DO?

A number of times over the years I have been asked the question "do cattle feel pain the same way we do?" To answer the question, it's important to understand a little bit about pain physiology.

When a pain stimulus is administered to an animal (for example, you pinch the claw on the hind leg of a calf), it activates pain and pressure receptors in the tissue. The receptors send a stimulus through the nerves to the spine. At the level of the spine there is often a reflex activated that makes the calf withdraw its foot rapidly.

The stimulus continues to travel up the spine to the lower part of the brain; at this point the pain stimulus activates a fight or flight (stress) response. The blood pressure will rise and the heart rate will change.

The stimulus continues to the cerebral cortex where it is perceived as pain. Once the pain is perceived the calf will typically display behaviour to avoid the pain stimulus; it may struggle, and they often vocalize. All of this physiology and some of the associated behaviours are very similar to what we would see in humans, dogs, horses and many other animals.

I think anyone who works with cattle knows that the perception and response to acute pain is not that different from what we see in humans.

The challenge with cattle comes when we try to assess or quantify post-surgical or chronic pain.

Pain in humans is a very personalized experience, we all perceive pain differently and respond to it differently but untreated pain can have adverse effects including depression, increased stress response, and catabolism (increased breakdown of fat and muscle).

In people we rely very heavily on responses to questions in order to assess the degree of pain. The doctor may ask you to grade your pain on a scale of 1-10, you may be asked about the quality of the pain; is it a "burning" sensation, is it a "crushing" sensation. Does the pain radiate to other areas of the body, what behaviours reduce the pain.

Once the doctor assesses these responses, they can prescribe an appropriate pain medication and assess the response to treatment; has the pain diminished or gone away completely. Unfortunately, all of these assessments rely on the individual being able to respond to questions.

Assessment of pain in veterinary medicine can be a real challenge, as we cannot talk with our patients; in general we must rely on behaviour to assess pain. We have developed some very good techniques to assess pain in dogs as they frequently demonstrate behaviours associated with pain and we can group these behaviours into a table that will allow us to score or rate the pain and determine if we need to administer pain medication to treat the pain.

One of the major challenges with

Spot the banded bull calves.

cattle is that they do not express many overt pain behaviours and the behaviours that they do express are very subtle. This is common to many prey species, such as deer, cattle and bison. It is probably an evolutionary response as predators will key into these pain behaviours when hunting herd animals. It is in their best interest not to show behavioural signs of pain.

Over the past few years I have been fortunate to have the opportunity to collaborate with Dr. Karen Swartzkopf-Genswein and colleagues at the Agriculture and Agri-Food Canada Lethbridge Research Centre. They have been doing some great work to determine how to assess and treat the pain resulting from surgical and band castration in cattle.

During one of my trips to Lethbridge, I was heading back to the research centre with my colleague Dr. Eugene Janzen. As we were passing one of the pens he suddenly slammed on the brakes of the truck and pointed out the window at the bulls in the pen. He said, "Look at that!" I was not sure what he was pointing to until I suddenly realized that even from a distance we could pick out all of the bulls that had been banded that morning.

The pen was a mixture of banded and unbanded bulls, all the banded ones had assumed a classic stance that we often refer to as the "sawhorse stance." The animals looked stiff with their hind legs thrust back and had a rigid appearance. Many of these animals were walking around or eating but they were displaying the stance that we typically see with hardware disease, twisted guts and any other conditions that we associate with abdominal pain.

This experience really made me realize that if you take the time to look, and know what to look for, you can often see the subtle behaviours that are associated with pain in cattle. Some other behaviours associated with pain in calves include such things as head shaking, foot stomping and ear twitching. We can look at the frequency of these behaviours in a research setting, but they can be challenging to use when you are trying assess pain in a clinical setting.

We currently have a lot of research tools to help us quantify pain and response to treatment following surgery in cattle. We can look at their stride length, the amount of time they spend lying or standing, feed and water consumption and weight gain. We can measure stress hormones and other markers in the blood associated with pain but we still often return to behaviour in a clinical and research setting.

I think over the years that I have studied the assessment and treatment of pain in cattle I have come to the conclusion that cattle feel and respond to acute pain in a very similar way that we do. I also believe that cattle feel chronic or post-surgical pain the same way that we do, but their behavioural response to chronic pain is very different to ours.

In answer to the question. Cattle feel pain the same way that we do, but their expression of pain is much more stoic.

Dr. Nigel Caulkett DVM, MVetSc is a diplomate of the American College of Veterinary Anesthesia and Analgesia and professor and department head of veterinary clinical and diagnostic science at the University of Calgary.

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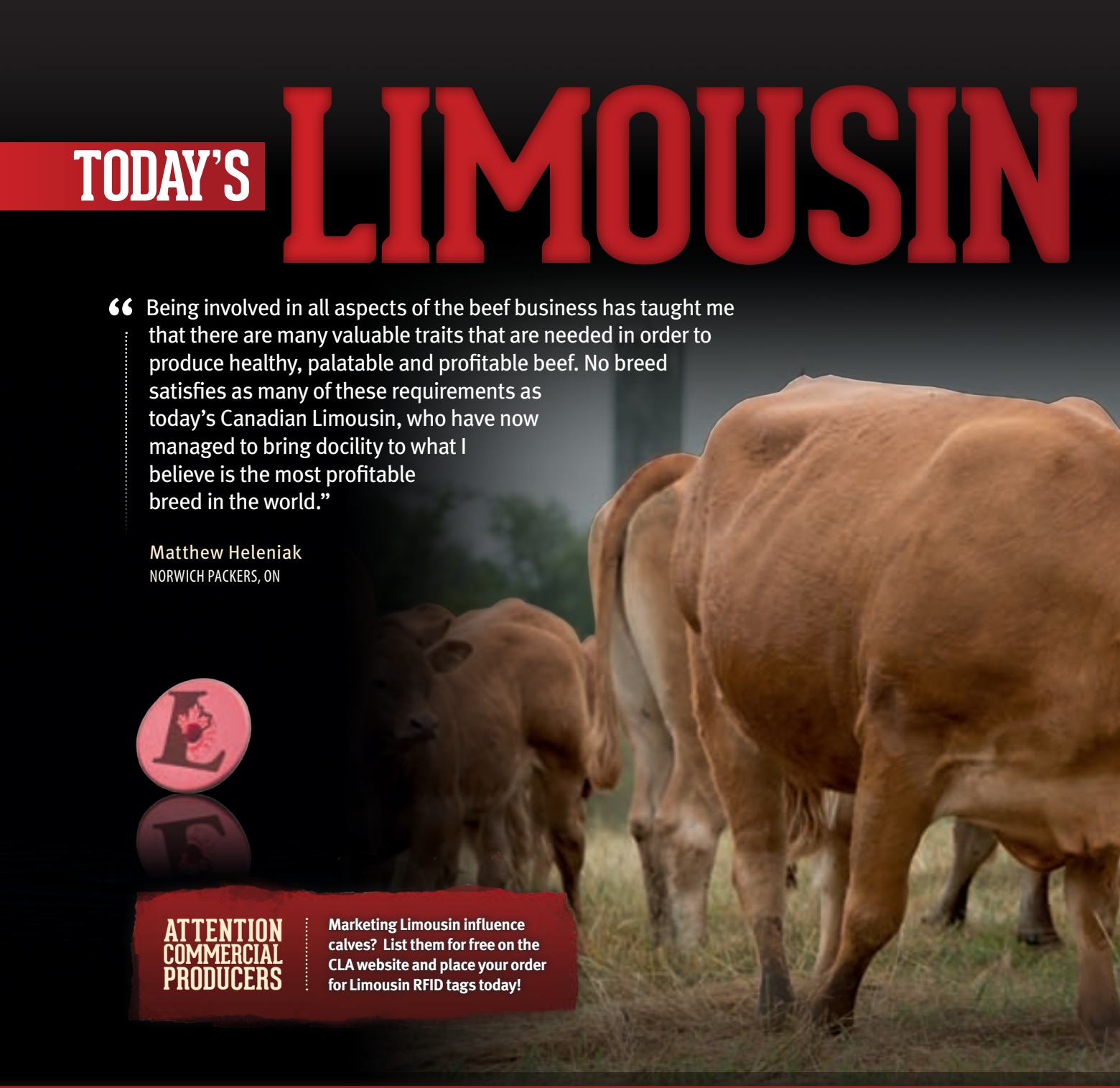

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By Heather Smith Thomas

EARLY TREATMENT VITAL TO FIGHT SEPTICEMIA IN YOUNG CALVES

Newborn and young calves are often vulnerable to systemic infection if they fail to obtain adequate passive transfer of temporary immunity from the dam's antibodies in the colostrum. Systemic infection results when bacteria or their toxins overwhelm the body's defenses and spread throughout the body via the bloodstream.

According to Claire Windeyer, an assistant professor of production health services at the University of Calgary's faculty of veterinary medicine, bacteria circulating in the blood is called bacteremia. "Their toxins in the blood creates a serious condition called endotoxemia. When one or both of these situations results in systemic clinical symptoms, the medical term is septicemia," she says. Unless this condition is quickly treated and resolved, the infection localizes in various organs and/or joints, resulting in joint ill (septic arthritis), meningitis, or shock and death due to organ failure.

Nathan Erickson, an assistant professor in large animal clinical sciences at the Western College of Veterinary Medicine in Saskatoon, says there are several ways the infection can enter the bloodstream, including scours, or an umbilical infection. "If these bacteria cross into the bloodstream, they can distribute through the body and settle in certain places. These calves need aggressive treatment and management with anti-inflammatories and antibiotics. This should be done in conjunction with help from your veterinarian," he adds.

"If the infection gets into multiple joints, it can be really difficult to treat. We might be able to stop the infection, but the damage to the joints may be permanent. Sometimes these calves are so compromised that they should be euthanized. It's best to prevent the infection, if possible," says Erickson.

Elizabeth R. Homerosky, DVM, MSc., an associate veterinarian with Veterinary Agri-Health Services Ltd. in Airdrie, Alta., explains that septicemia is characterized by the presence of pathogenic bacteria in the blood. "It is commonly accompanied by signs of shock due to release of toxins from the bacteria. Numerous types of infections by numerous species of bacteria can result in septicemia; however, salmonella and E. coli are the most common pathogenic bacteria cultured from the blood of an ill newborn," she says.

"Newborn calves that fail to absorb an adequate amount of gamma immunoglobulins (IgG) from consumption of colostrum are the most susceptible to septicemia. However, septicemia can result from a number of different types of infections such as navel ill, joint ill, diarrhea, pneumonia, or any other infection that allows pathogenic bacteria access to the bloodstream," she says.

Calves that are several weeks old when a severe infection goes systemic must be closely monitored

SYSTEMIC INFECTION

and quickly treated for any illness to avoid the possibility of septicemia, which can be fatal. Some types of G.I. tract infections, for instance, can readily produce an endotoxemia that may kill the calf within a few hours. Severe pneumonia can also turn fatal if the lung infection goes systemic.

SIGNS OF SICKNESS

"Common clinical signs associated with septicemia include fever greater than 104 F, rapid heart rate, laboured breathing, along with abnormal blood clotting which can appear as hemorrhage on mucosal surfaces throughout the body," says Homerosky.

"Newborn calves with septicemia may be down and unable to get up with a generalized weakness. They may have diarrhea, dehydration, weak suckle reflex, dark red mucous membranes and prominent vessels in the sclera (whites) of the eyes. Severely affected newborn calves may exhibit neurologic signs (bizarre behaviour, aggression, head-pressing) or be in lateral recumbency (flat on their sides, unable to get up). Calves in cardiac failure may be hypothermic (low temperature) with cold extremities," she says.

Windeyer says some of these calves may just seem dull and depressed. "Some will have fever while others will be cold. They may have high or low heart rate, increased or decreased respiratory rate, and poor appetite. Gums may be red, and blood vessels become apparent across the whites of the eyes. Onset is quick, and as they worsen, pulse becomes weak and extremities become cold. The calves with meningitis will often extend their head and neck," she says.

TREATMENT

Calves with scours can be at risk for septicemia, so they should be treated. Windeyer says that when the gut is compromised by infection, regardless of the type of diarrhea, E. coli bacteria commonly present in the gut can translocate from the compromised gut into the bloodstream.

"It is estimated that 30 per cent of calves with scours have circulating bacteria in the blood. Not all of these calves will develop septicemia; however, calves showing signs of systemic illness (fever, depression, etc.) or have blood or mucus in the manure are more likely to be septicemic. Antibiotic treatments for calves with scours are not so much for the scours as they are for reducing the risk of septicemia," says Windeyer.

Early recognition of clinical signs associated with septicemia is critical to treatment success. "Broad-spectrum antibiotics and supportive care are recommended for treatment of septicemia. Any issues with dehydration, energy or electrolyte depletion, or other secondary issues should be promptly addressed to help promote treatment success and prevent organ failure," says Homerosky.

"Treatment of calves with severe neurologic signs is generally unrewarding as the infection is likely present in the brain and has progressed beyond a cure. Calves dying from septicemia typically die as a result of multiple organ failure.

"Unfortunately, there are several neurologic diseases, especially in older calves, that resemble septicemia and need to be ruled out. These include polio (caused by either thiamine deficiency or sulphur toxicity) or nervous disease seen in association with coccidiosis. Often these cannot be distin-

Continued on page 34

Continued from page 33

guished in a timely manner or without examination by a veterinarian," she says.

"Older calves with neurologic signs should receive a number of treatments to cover all potential causes, including a broad-spectrum antibiotic, thiamine and an anti-inflammatory such as meloxicam or dexamethasone," says Homerosky. Your veterinarian can prescribe an appropriate broad-spectrum antibiotic, selecting one that might be most helpful in this particular case.

"Effective drug choices for septicemia include ampicillin, ceftifur or flurfenicol," says Windeyer. "Intravenous administration is preferable so consider calling your vet. Anti-inflammatory drugs may also be necessary to help moderate the excessive inflammatory response that can result. Supportive care can make all the difference — keeping the calf warm and dry, providing deep bedding, fluids and nutrition (which is often more effective if administered IV). Consider calling your veterinarian to do a culture and sensitivity test if there is treatment failure during an outbreak affecting multiple animals to aid in selection of the appropriate antimicrobial," she says.

PREVENTION

Good management of calving cows and cows with young calves is crucial. Make sure their environment is as clean as possible. "Source of the bacteria for vulnerable calves is often from a contaminated environment, particularly through the umbilicus," says Windeyer. Therefore, "dilution is the solution to pollution" by calving on clean, dry pasture, providing clean bedding, having clean equipment (such as esophageal feeders), keeping cows clean, dipping navels if need be, etc.

"Calving in a large pasture with natural shelter and windbreaks where newborns do not have exposure to older calves is ideal," adds Homerosky. Older calves with scours can quickly contaminate the area, and spread infections to younger, more vulnerable calves.

"Ensuring timely and adequate colostrum consumption promoting adequate transfer of passive immunity is critical to helping prevent bacterial infections and subsequent septicemia," Homerosky says. Ideally, you want calves up and suckling within a couple hours of birth, and definitely by the time they are four hours old.

"Any calves exhibiting a weak suckle reflex shortly after birth, or any calves that had to be delivered with a hard pull are less likely to consume enough colostrum on their own by the recommended four-hour cutoff." These calves should be assisted in colostrum consumption before that four-hour period has elapsed.

Windeyer says any failure in the transfer of passive immunity via colostrum creates a major risk factor for septicemia, particularly in calves less than two weeks of age. "In beef calves, recent research says calves with more than 24 g/l of immunoglobulin G in their blood are less likely to get sick or die than those with inadequate passive immunity. Colostrum quality in beef cows is generally very good (with high concentrations of IgG) so failure is typically either due to poor vigour of the calf, inadequate volumes of colostrum generated by the cow, or environmental challenges such as cold, mud, etc. Dairy colostrum has, on average, 25 per cent the concentration of IgG compared to beef colostrum and is a poor substitute. Colostrum replacement products with at least 100-200 g or home-grown, frozen colostrum are an important resource to have on hand for these calves, to avoid the risk of septicemia," she adds.

Forage & Grassland GUIDE

Canadian Forage and Grassland Association

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Canadian Forage and Grassland Association

2017

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Welcome to the Forage & Grassland Guide, *produced in partnership by the Canadian Forage & Grassland Association (CFGA) and Glacier FarmMedia LP and distributed through Country Guide, Canadian Cattlemen and Le Bulletin des agriculteurs. It focuses on issues of importance of forage and grassland to crop and livestock producers across Canada.*

For more information on forage and grassland management in your area, we encourage you to contact and participate in the activities of your regional or provincial association.

Canadian Forage and Grassland Association
Cedric MacLeod
466 Queen Street, Wilmot Alley
Fredericton, NB E3B 1B6
cedric@canadianfga.ca
www.canadianfga.ca

British Columbia Forage Council
Sheri Schweb
117 Roddie Road, Quesnel, BC V2J 6K2
(250) 255-9065
bcfc@bcforagecouncil.com
www.farmwest.com/bc-forage-council

Alberta Forage Industry Network
Christine Fulkerth, Chair
4500 – 50th Street, Olds, AB T4H 1R6
(403) 507-7914
info@albertaforages.ca
www.albertaforages.ca

Saskatchewan Forage Council
Leanna Rousell
PO Box 308, Asquith, SK S0K 0J0
(306) 329-3116
office@saskforage.ca
www.saskforage.ca

Manitoba Forage and Grassland Association
Duncan Morrison
c/o 145 Edstan Place
Selkirk, MB R1A 2E8
(204) 770-3548
info@mfga.net
www.mfga.net

Ontario Forage Council
Ray Robertson
206 Toronto St. South, Unit 3
Markdale, ON N0C 1H0
(519) 986-8663
Email: ray@ontarioforagecouncil.com
www.ontarioforagecouncil.com

Ontario Soil and Crop Improvement Association
Andrew Graham
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Andrew.graham@ontariosoilcrop.org
www.ontariosoilcrop.org

Conseil québécois des plantes fourragères
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Québec, PQ G2B 2P9
info@cqpf.ca
www.info@cqpf.ca/

New Brunswick Soil and Crop Improvement Association
Gerry Gartner
259 Brunswick Street, Suite 302
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operations@nbagriservices.ca
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Who will breed the next generation?

Forages aren't only suffering from a shortage of research dollars, but a shortage of researchers to do the work if the money were available

BY RON FRIESEN

See if you can answer these two skill-testing agricultural questions.

What is the largest crop in Canada?

Which crop has one of the poorest records for funding research and breeding programs?

If you answered "forages" to both, you're right. You've also put your finger on a chronic problem in Canada's forage industry.

Statistics show the total acreage of pastureland, tame forages and native hay far exceeds the seeded area for wheat and canola. You'd think that would put forages at the top of the list when it comes to research funding. Sadly, no.

Historically, Agriculture and Agri-Food Canada has been the major player in forage breeding. But there are only five publicly funded programs for breeding tame forages in Canada. Government funding for forage research has been largely static for the last 10 years. It's estimated only about a third as much forage research is being done nationally today as in the 1980s.

The bottom-line reason for this state of affairs is a lack of money and, subsequently, a lack of qualified people.

"There is a critical shortage of forage researchers, in particular plant breeders, in Canada and several of the few remaining researchers are nearing retirement in the near future," says a recent Beef Cattle Research Council report on developing improved native and tame forage varieties for Western Canada.

Thin talent pool

Given the thin talent pool, the question becomes not just what new forage varieties will be bred, but who will do the breeding.

"There is a lack of human resources for forage breeding in Canada," says Doug Cattani, a perennial crop breeder who mans the lonely ramparts of forage breeding at the University of Manitoba. "It's getting to the point where there's almost no one left."

Those who are left tend to focus on major species. Research projects often focus on alfalfa, clover and grasses because there are not enough breeders to cover all species.

Part of the reason for the shortage of forage researchers is a long-standing decline in public funding with industry players not taking up the slack. Reynold Bergen, the Beef Cattle Research Council's science director, says the beef industry always recognized the importance of forages but had extremely limited research funds. So BCRC deferred research to the forage industry. However, the forage sector couldn't fund research because it had no commodity checkoff and no way to implement one. As a result, Bergen says, no one in the industry was funding research, so it became a low priority in the public sector as well. Declining government budgets and provincial cutbacks to universities only aggravated the problem.

Although some private companies are involved in forage research, especially in the U.S., there appears to be no great incentive for them to cash in either.

"(Private companies are) in business to be profitable and forage breeding does not lend itself to a good return on investment," says Cattani. "Who wants to buy a perennial crop that did well in the first year and did nothing thereafter?"

BSE casualty

Edward Bork, a rangeland ecology and management specialist at the University of Alberta, pins part of the blame for the "slow systematic erosion" in forage research on BSE. After BSE hit in 2002 and international barriers closed to Canadian beef and live cattle, industry priorities suddenly shifted to herd health and marketing strategies. Research into forage breeding and development became less important, given the immediate market crisis.

Another reason why forages appear to get short shrift is the very nature of the crop. Forages are perennials that take a long time to breed and even longer to show a financial return on investment. Compare that to high-value annual crops such as corn and soybeans, which see new hybrids and strong returns every year. Guess which crop gets most of the attention when it comes to breeding programs and agronomic research?

Still another problem is a basic lack of information about how to place a value on forages. Obviously, a ton of hay is worth less than a few bushels of canola or soybeans. But, as University of Manitoba agriculture dean Karin Wittenberg points out, it's hard to measure the financial worth of grasslands because most hay and tame forages are consumed on the farms where they were grown. Since there are few price discovery or marketing mechanisms for them, it's hard to evaluate their value.

Not just a crop

However, that's assuming you only see hay and forages as a crop. Researchers and producers are quick to point out the value of grasslands goes far beyond that. They say grasslands also provide environmental goods and services such as water storage, flood mitigation, wildlife habitat, biodiversity, carbon sequestration and greenhouse gas reduction.

That's the new frontier forages should be focusing on, says Wittenberg, a ruminant nutritionist by training.

"Forages serve a sustainability value. How you develop a forage

University of Manitoba forage breeder Doug Cattani says there's not much incentive for private companies to invest in perennial crops for which they can't sell seed every year. PHOTO: LORRAINE STEVENSON

breeding program that can serve a sustainability function as well as a competitive function — that has not been given much time and thought."

Wittenberg says she and her colleagues have tried to put an economic value on the services grasslands and forages provide. Unfortunately, they could find virtually no data to provide hard numbers.

However, there are signs that may be changing. Bork, a forage agronomist, says policy-makers in Alberta are showing "a marked interest increase" in environmental goods and services from native grasslands and perennial forage systems.

Bork says the last six years have seen "a massive investment" in Alberta in quantifying and understanding the environmental goods and services that perennial grasslands provide. People are waking up to the fact that forages give producers a "social licence to operate" by providing public benefits in carbon sinks, biodiversity and ecological improvements, he says.

"It's getting to the point where there's almost no one left."

DOUG CATTANI, UNIVERSITY OF MANITOBA

"I can tell you, we're gaining an enormous amount of traction."

The next step will be to use this data as ammunition in persuading regulators and policy-makers to reward landowners for these goods and services," says Bork.

"We need to recognize it and start (implementing) ways that landowners can get paid for retaining, or even improving, these things for society's benefit."

More research funds

As for funding research, that may be starting to improve, too. The BCRC's Bergen says about eight years ago Canada's beef and forage sectors got their heads together and decided the industry had to step up to the plate instead of waiting for governments to do so. Now, 15 cents out of every dollar collected by a national checkoff on cattle sales goes toward BCRC research projects, compared to only five cents previously. Today, Bergen says, 30 per cent of BCRC's budget focuses on forages, up from 10 per cent before. Funding is levered three to one through Growing Forward.

"It's a bigger slice of a bigger pie," says Bergen.

Reversing the funding decline in the private sector is resulting in new forage research positions being created in government and universities across Canada, Bergen adds.

"They're starting to say 'wait a minute, industry is investing in this, this is important, we'd better be in that game, too.'"

Cattani says there should be no difficulty getting graduate students to train as forage specialists, as long as funding is in place before the students arrive.

A sign, maybe, that the tide may finally be starting to turn for forage research. ■

Grass is a crop too

Just because forage is on marginal land doesn't mean it should get marginal management, says a recent Beef Cattle Research Council study

BY RON FRIESEN

If grain farmers routinely fertilize their crops to get higher yields and profits, why don't forage producers do the same to their pastures?

That question is at the heart of a recent Beef Cattle Research Council study into improving forage yields in Canada.

The study notes that while annual crops have seen significant yield increases over the past 60 years, hay yields in Canada have hardly budged at all. This puts Canada's cow-calf sector at a competitive disadvantage because the cost of forage per tonne is higher here than in other countries.

"Over the long term, improving forage productivity is crucial for future competitiveness of the cattle industry," says the study.

It concludes that a major reason for this low productivity is soil nutrient deficiency in pastures and grasslands.

You'd think the solution to the problem would be easy. Fertilize hay lands and you increase forage yields. Greater yields mean higher stocking rates, improved animal performance and a lower cost per unit of production, which translates into reduced winter-feeding costs per cow.

Unfortunately, it's not that simple. The study recognizes there are reasons why producers tend not to fertilize forages the same way they do wheat and canola.

Marginal land mindset

One reason is economics. As Reynold Bergen, Beef Cattle Research Council's science director explains, farmers tend to invest heavily in high-value annual cash crops. That involves buying or renting more land for those crops. Doing so increases competition for land, drives up land prices and pushes forage production to marginal land that cannot produce high-value crops. As a result, forage land has lower expectations put on it, along with less investment such as fertilizer.

That's counterproductive because lower fertility inevitably means lower yields, and low forage yields are the most common reason for terminating a stand, Bergen says.

"If you're expecting to get yields from a crop, you don't just need it to get rainfall or irrigation. You need to feed it. It needs nutrients. If you keep pulling off those nutrients without replacing them, you're going to starve the plants. And that's why yields go down. So stands get broken up after only a few years."

Currently, application of fertilizer to forage crops in Canada is minimal. The BCRC study estimates only 25 per cent of improved pasture and hay land is fertilized. Just 15 per cent of alfalfa hay fields receive fertilizer. Given the combination of low nutrient input and the high nutrient uptake by the crop, it's hardly surprising that forage stands in high-moisture regions of Western Canada are maintained for only three to five years. In semi-arid regions, the average life of a forage stand is six to nine years.

Other reasons why farmers don't fertilize pastures include high fertilizer prices and poor financial margins (until recently) in the cattle industry. Moisture limitation is another factor. Fertilizer applied to forage is top dressed, not incorporated (as with annual crops). This can result in nutrient loss through volatilization (evaporation of N) in dry conditions, or runoff in wet years, which in turn creates environmental concerns.

Fertilizer considerations

That said, fertilizing forages can produce results. The study cites a 10-year project in Manitoba which showed adding fertilizer increased the productivity of grass pastures when applied to soil test recommendations. The downside was that target yields were often not reached due to moisture limitations.

The type of soil can also influence the effectiveness of fertilization. The study points out that sandy loam soil (the kind of marginal soil where

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forages are often grown) has a low water-holding capacity, limiting the moisture available to the plant. This reduces plant growth, forage quality, stocking rate and rates of gain in animals. As a result, there may be a limited benefit to fertilize and less incentive to do so.

Even if you do fertilize forages to increase yields, you need sound economic reasons for doing it. Bergen points out higher yields do not necessarily translate into lower costs or increased profits. The profitability of fertilizing forage crops depends on the cost of fertilizer and the price of hay.

"You can double your yield and increase your carrying capacity in the number of bales. But if it costs you $500 to double that yield and that doubled yield is worth only $250, it just doesn't make sense," says Bergen.

For that reason, it's important to know the per-unit cost of production for hay (e.g. $/tonne) to determine which is the more economical choice: fertilizing hay or just buying it.

Keeping fertilizer at home

The trick is to get nutrients on forage land in a cost-effective way to improve forage productivity, other than adding chemical fertilizer or composted manure. Bergen lists several options for achieving that.

One option is to use in-field winter feeding systems such as bale grazing. Bergen says bale grazing kills two birds with one stone. First, when cattle graze bales during the winter, they deposit fertilizer on the field in the form of manure. Second, the bales cattle do not eat stay on the ground and become another soil nutrient. Together, these practices end up leaving more nutrients on the land than it had to begin with, thus improving soil fertility. An added benefit is that bale grazing reduces winter feeding costs because producers are not always hauling in feed.

Another option is to mix legumes (usually alfalfa) with grasses in a stand. The study notes that properly

"If you keep pulling off those nutrients without replacing them, you're going to starve the plants. And that's why yields go down. So stands get broken up after only a few years."

REYNOLD BERGEN, BCRC

inoculated alfalfa fixes nitrogen from the atmosphere. As a result, additional N is not needed to increase dry matter yield and protein content. In this way, adding alfalfa to the mix increases productivity without the extra cost of fertilizer. It also reduces the risk of bloat because animals are not grazing straight alfalfa.

The practice seems to be catching on. It's estimated the area of alfalfa and alfalfa mixes as a percentage of total tame hay production increased from 44 per cent in 1971 to 66 per cent in 2011.

Bergen acknowledges it's hard to measure how much soil fertility practices are improving. But BCRC offers webinars on the subject and is starting to conduct followup surveys with participants to measure the take-up of its recommendations.

More information is available on the BCRC website at www.beefresearch.ca. ■

MAINTAINING THE GRASS-LEGUME MIX

It's one thing to have a grass-legume production system. It's another thing to maintain that stand. Studies show the percentage of alfalfa or sainfoin in a grass-legume mix tends to decline significantly over four years. The Beef Cattle Research Council recommends several management techniques to help maintain legumes in a mixed stand:

- In spring, wait until alfalfa is three to four inches tall before grazing. After spring grazing is over, let the alfalfa regrow for 25 to 40 days before cutting it for hay.
- Let plants rest during September and October. Or control grazing to maintain six to eight inches of standing alfalfa.
- Do not leave stubble lower than two to three inches in fall. This helps protect alfalfa from winter damage.
- Let plants grow without cutting or grazing for four to six weeks before the first killing frost.

BCRC also provides some tips to reduce the risk of bloat while grazing alfalfa:

- Do not graze alfalfa when it's wet.
- Don't turn hungry animals on to an alfalfa pasture because they'll overeat.
- Wait until alfalfa is in full bloom before grazing it. The risk of bloat is highest when alfalfa is in the vegetative to early bloom stages of growth.
- Do not graze alfalfa for two to three weeks after a killing frost. Frost can increase the risk of bloat.

For more information about legume grazing, check out www.foragebeef.ca.

Less volume, but more profit?

Quebec researcher says that since dairy farmers are paid based on components, forage-fed cattle can outperform those fed on corn silage

BY RAY FORD

Corn silage use is trending on Quebec's large dairy farms, but Valacta's Robert Berthiaume argues farmers who run against the herd can bulk up their bottom line with perennial forages.

"If you make the best use you can of perennial forages, you can make a lot of money, at least as much or more than your friends with corn silage," says the forage systems expert for Quebec and Atlantic Canada's dairy herd improvement agency. "We're trying to prove to our clients that the milk that is produced by (perennial) forages can and should be the most economical milk that is in that bulk tank."

For Berthiaume, the key lies in component pricing. Dairy farmers get paid for fat, protein, and other solids in their milk, rather than total milk volume. So even if an alfalfa and grass-fuelled herd doesn't crank out the same volume as a herd powered by corn silage, it can hold an edge on components.

He points to a 2013 New York State study of six herds. Five were fed corn silage as the bulk of their forage, while one herd relied on a grass/legume mix. In terms of output, the legume/grass-fed cows placed second from the bottom, at 88 pounds per cow per day. But in gross income per cow, those same perennial forage eaters finished second from the top.

The secret? The herd outperformed its peers in components, (especially milk fat, at 4.3 per cent.) When it comes to milk production, Berthiaume says high components are what "really writes the cheque."

The milk from forage equation

One way to gauge the efficiency of forage use is the "milk from forage" (MF) calculation developed at Laval University in the 1970s. "In Quebec, the concept is quite well known," Berthiaume says, adding "it hasn't been exported very well."

The math behind MF looks complex, but the basic concept is simple. If you subtract the milk production boost from concentrates, you're left with output that's fuelled by forages. By further subtracting the forage required to maintain the cow, you're left with the total milk produced by the forage in the diet.

Not surprisingly, herds with high MF tend to be efficient producers. But when the paycheque comes, the most efficient farmers using perennial forages outperform their corn silage counterparts.

Using detailed financial and production figures from 672 Quebec dairy farms, Berthiaume says the top 20 per cent of corn silage-fed herds produced 136 more kilograms per cow every year. But in terms of net income, the perennial forage herds brought in an additional $184 per cow.

To produce at those high levels, producers must maximize intake of high-quality forage. That requires the sophisticated use of complementary concentrates, with the right mix of proteins, sugars and starches.

It's a complex balancing act, because "every time you feed concentrate to an animal that is on a forage diet, the animal will reduce its forage intake," Berthiaume warns. This substitution impact is also most significant with high-quality forages, rather than poorer hay or silage.

Closing the productivity gap

There are significant advantages for those who get it right. The top 20 per cent of Quebec producers are pumping out 3,751 more kilograms of milk and $833 more net income per cow than their counterparts in the bottom-performing 20 per cent of dairy farms. If less-productive farms can close that gap, it will mean major gains for individual farms and the entire industry.

Then there's the herd-size gap. Not surprisingly, corn silage herds tend to be bigger, averaging 91 cows. On large farms, corn silage is attractive because it offers roughly twice the yield of perennial forage. Better still, it delivers the yield in one cut, versus three or four for alfalfa and grasses.

"My question is to the research community: how can we make hay crops, silages, alfalfa-grass mixes more appealing to larger farmers?"

ROBERT BERTHIAUME

Low-lignin alfalfa may help reduce silage corn's yield advantage, allowing farmers to take fewer cuts of more mature alfalfa and still get good nutritional quality. But Berthiaume stresses there's more work to do.

"My question is to the research community: how can we make hay crops, silages, alfalfa-grass mixes more appealing to larger farmers?"

Ultimately, he says, deep-rooted perennial crops provide long-term soil-building benefits, and farmers need to factor in the boost to soil health. "I'm worried if we go only to annual crops, without putting perennials in the rotation, we end up with more (plant) diseases and depleted soils." ■

The challenge of growing quality forages

There are many reasons why production and quality may be less than ideal

BY RALPH PEARCE, CG PRODUCTION EDITOR

Perception that forages are too weather-dependent or that producers plant one year and leave them alone for three must be challenged.

The name varies from farm to farm and from one region of the country to another. Some refer to it under the blanket term "forage" while others attempt to be more specific — hay, haylage, silage, dry hay or pasture. Whatever the term, two distinct trends have unfolded in the past five years: forage production is declining, and with it — say some in the industry — the quality.

Statistically and anecdotally, the numbers reflect the drop. Statistics Canada numbers for 1981 to 2011 (Fig. 1) indicate hay and other fodder crops area rose steadily between 1986 and 2006, and then declined, losing acres to oilseeds and pulses, especially in the West.

Some of that trend may be due to increase of canola, pulse and soybean acres — many of those acres, and some in the East — have come out of forages.

Due to factors such as larger acreages, larger livestock operations and producers needing to spend more time with their animals, forages may not be getting the management attention they deserve, but some extension agronomists are trying to reverse that.

Boosting management

Many advisers and specialists have their opinions on improving forage production and quality, yet it seems one recommendation makes the most sense: get the best start. That can include drilling of the seed (not broadcasting it), using starter fertilizer with the drill (especially calcium, sulphur and magnesium) and paying better attention to early weed control.

Perspectives vary, but broadcasting seed is seen by some as little more than a "controlled spill." There's also more packing required. Using a drill has the greater potential for more even emergence and growth.

As for weed management, at least in Ontario, there is a lack of registration of more-effective herbicides such as Broadstrike, which is already registered for use in Ontario, just not for alfalfa. Instead, producers are left with 2,4-DB or a tank mix of 2,4-DB with something like MCPA. The problem with 2,4-DB

is that some producers don't like it because of stress on alfalfa.

Time management

Another disincentive to forages is the commitment to a three- or four-year crop. Producers who rely on forage generally want to spend more time in the barn, which means less on forage management.

For Carl Loewith, time management comes down to two things: finding the right production system and hiring the right people. Loewith, a dairy producer who farms just west of Ancaster, Ont., is a first-year no tiller with his forage crop, and he hires custom workers, allowing him to spend more time paying attention to the other end of the operation.

Loewith doesn't agree that forage production yields are in decline.

"It's just that they're not keeping pace with the advances that other crops are experiencing, and the technology that's been incorporated in others. I think we may be holding our own and we should be advancing but other crops are doing a better job."

Some of the biggest challenges are still wrapped up in the basics of good weed-free establishment in that initial year, followed by attention to fertility in subsequent years.

"I think we're still stuck in that mindset that 'we're going to plant this crop, it'll be good for three or four years, and we'll plant it and maybe fertilize it once a year and we'll let it do its own thing,'" says Loewith.

"I don't think we've done the research that other crops have done in terms of seeding rates, plant population, the fertility and the timing of fertility. A lot of research is going into the more popular crops — and forages don't have the glitz or bling that corn, soybeans or wheat have, so farmers believe it's a relatively cheap crop to grow, and they treat it that way."

What's the yield?

Another problem is that forage yields are difficult to measure. Cash croppers know their bushels per acre, but the average forage producer can't quote tons per acre. Forages are generally put in silos or in big bales without being weighed. Measuring the effect of different production practices is difficult if growers don't have a good handle on yields.

As for no tilling alfalfa, Loewith is hesitant to talk about any long-term benefits — he's only been at it for a year. But a lot depends on the custom operator. In the end, it translates to less stress and less time spent in the field. He's uncertain how no tilling might work on heavier ground, although there are examples of other growers on heavier soils that are making it work. But on lighter soils like sandy loams, it's fine. Loewith says he will do the same next year.

"There are some significant pros: first all of all, it's a lot less work for us — because we hire somebody to do the no tilling, so we're not working these fields. The gentleman we have comes in with a 40-foot drill, so he can cover a lot of ground — and it's just a phone call for us. We're not working that field two or three times before or packing it after."

Communications also key

Thomas Ferguson, a forage and grazier specialist with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), sees definite benefits in custom work. But the communications channels must be open and clear to ensure the work is done the way it needs to be done to get high-quality forages off the field at that proper maturity.

"When I talk about 'quality hay,' I refer to three things: harvesting at the correct maturity, harvesting at the correct moisture content, and having the proper storage of the hay," says Ferguson.

"With high-producing dairy cows, it's really important to have that early maturity but for many other end-uses, you don't have as high crude protein, and you can let the plants mature a little more to get more tonnage off the fields. It's still really important that the forages are harvested at the proper moisture level for the storage system that you have, and we don't lose any dry matter — if they're being fermented."

If it's for dry hay, the producer needs to make sure it's dry enough to prevent mould or it doesn't become dusty in storage.

Measuring the value

Ferguson notes that since most of the crop fed on-farm to livestock, growers don't see a financial transaction. Many underestimate the value that forages bring to their operation, so

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"It's just that forages aren't keeping pace with the advances that other crops are experiencing."

CARL LOEWITH, DAIRY PRODUCER

It's not necessarily that forage quality is in decline, but that other crops are advancing faster.

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advisers, feed specialists and extension personnel need to do a better job of showing the financial returns.

"The environmental benefits are huge, too," says Ferguson. "Adding forages to the rotation improves soil structure, drainage and water retention — and it increases the organic matter. And it'll add residual nitrogen to the following crop, so those extra benefits will increase the profitability of the rest of the rotation, and you can add up to 15 per cent in yield potential just to the corn crop that's added the year after the forages are taken out."

Ferguson echoes Loewith's comments on the importance of fertility and an early start.

"We need to see more even emergence with our alfalfa in order to have better weed control, as well," says Ferguson. "We want to make sure that the plants all get off to the same start so that we're not going in when some plants are at two leaves and some are at four. Doing a better job of getting the plants to emerge means weed control will see benefits of that throughout the life of the field, and you'll get increased tonnage on every cut with good stem longevity as well."

Tests, tests and more tests

Many producers and advisers talk about the lack of research for forage relative to corn and soybeans. Jeff Sherman is trying to change that.

As a dairy specialist recently hired by CanGrow, Sherman brings his years of experience with the American dairy sector as well as time spent in the feed industry in Ontario. He agrees production is down, but that in certain instances, quality can be improved.

Sherman is focusing on improving the soil activity and watching the impact on feed quality, uptake and performance. In particular, he's looking at cation uptake, and methods of increasing it. He says cations help to produce sugars, the sugars help to produce the starches and the starches help to produce fats (or fatty acids), which are critical in digestibility.

Sherman says it's not a well-known concept, and it can be a challenge for the industry to grasp. He says growers are not doing the best job of matching fertilizer applications to crop uptake and that more growers are over-applying, especially their nitrogen. The answer is a "whole systems" approach, not just with the crop in the field, but including the soil, roots, organic matter, and nutrient uptake.

Understand the soil

Many dairy producers rely on the MILK2006 feed calculator, and Sherman agrees that it's a good foundation for measuring feed quality. However, it doesn't address the shortfalls seen from soil test results. Soil activity needs to be part of the equation, understanding that it's alive and moving constantly.

"Too often, we just want to take the easy way out, whether we're dairy farmers or grain farmers, we want to talk about N, P and K — and it's not just N, P and K," says Sherman.

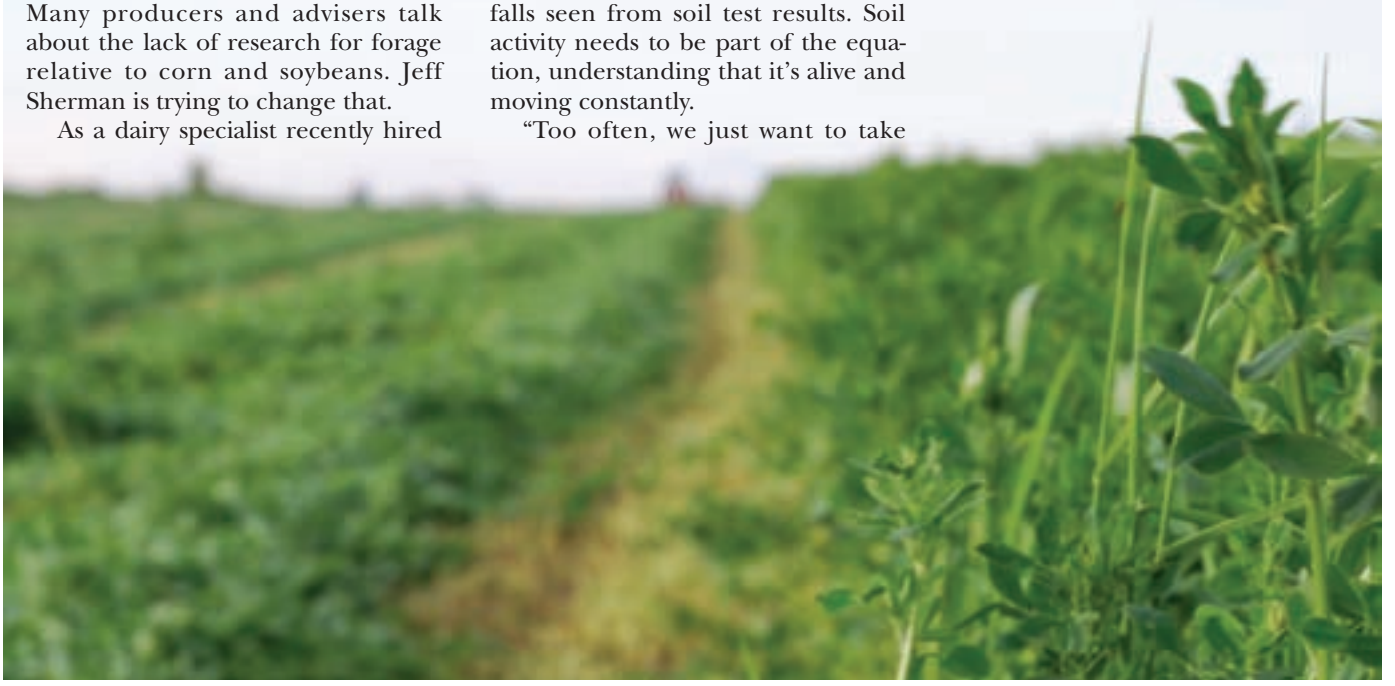
For example, he cites involves four years of alfalfa and an average harvest of 10 tons of dry matter per acre. Alfalfa will generally contain two to three per cent potassium — at 10 tons (20,000 lbs.) of dry matter, that's 400 pounds of potassium per year leaving the field.

Producers also need to be aware of relative feed value and relative feed quality, as well as testing their forages to determine the balance of amino acids, particularly methionine and lysine.

There are certainly encouraging signs of opportunity and recognition in forage production, and the potential that comes out of that process. But there's still a lot of room for improvement. ■

"Too often, we just want to take the easy way out and talk about N, P and K."

JEFF SHERMAN, CANGROW CROP SOLUTIONS



The same principles that apply to corn and soybeans must also apply to forages, including even emergence and good early-season weed management.

Research examines impact of grazing on carbon storage

By Trudy Kelly Forsythe

A direct economic value of $5.09 billion makes forages Canada's third largest crop. And, research shows the impact of Ecosystem Goods and Services (EG&S) increases that value even more.

Perennial grasslands purify and store water, mitigate flooding, support pollinators, provide habitat for wildlife and sustain biodiversity. They help reduce carbon because their root systems can store up to 2.7 times more carbon than annual crops. They sequester carbon deeper in the ground and can slow the breakdown and release of carbon into the atmosphere.

Daniel Hewins, an assistant professor of ecosystem ecology at Rhode Island College, spoke about rangeland EG&S at the Canadian Forage and Grassland Association's annual conference in Winnipeg in November, highlighting research at the University of Alberta (U of A) being done in collaboration with Alberta Environment and Parks (EAP).

Researchers, led by U of A professor Dr. Edward Bork, took samples from 114 grassland enclosures maintained by EAP, including from areas both inside and outside long-term cattle enclosures. They then assessed plant biomass, composition, diversity and carbon storage.

Mark Lyseng collects a forage biomass sample inside a cattle exclosure (a non-grazed area) in the Aspen Parkland region of Alberta. PHOTO: DANIEL HEWINS

GRAZING FOR CARBON STORAGE

Research revealed light-to-moderate intensity grazing over a period of 30 to 60 years promotes carbon storage in the soils of many of Alberta's grasslands-dominated, natural subregions. Hewins explains this may be in part because rangelands evolved with grazing of bison, making many of the plant communities grazing-tolerant. Grazing may directly (via defoliation) and indirectly (via changes in light and moisture) promote biological activity, such as nutrient cycling, which is related to ecosystem health.

In the dry mixed grass prairie, researchers did not observe a grazing effect on carbon storage. However, in the remaining, high-moister regions, they saw a trend toward increases in carbon stores under grazing. They concluded that, in general, moderate-level grazing leads to greater reservoirs of carbon when compared to non-grazed settings.

"Our data also highlights what has already been lost in carbon from past conversion, a staggering $11.3 and $4.2 billion in the Parkland and Prairie regions," says Bork, adding they compared different alternative land uses, specifically annual cropland, tame pasture and native grassland, on soil carbon stocks.

ENVIRONMENTAL INCENTIVES

Hewins says there are currently no incentives to maintain carbon in existing native grassland. The Alberta government is working on policies to value grassland carbon stores and work is underway to directly link comprehensive biodiversity data with cattle producer management practices.

Further research to build a solid foundation of the size and value of the benefits of grasslands is ongoing, Bork says, noting the livestock industry plays a key role in supporting these forward-thinking studies.

CANADIAN FORAGE & GRASSLAND ASSOCIATION
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Quality samples are taken from every plot, assessing diseases, stand establishment and re-growth, among other observations.

At Pickseed, forages are No. 1

Acquisition by a Danish company has allowed a sharp increase in research trials across the country

BY RALPH PEARCE, CG PRODUCTION EDITOR

Forages may lack for attention in Canada's overall research budget, but not at Pickseed, which has long focused most of its attention on the forage and turf sectors.

Now owned by Denmark's DFL-Trifolium, Pickseed operates seven research stations across Canada, with its main facility in Lindsay, Ont., and another near Port Hope. There are also two at Ste. Hyacinthe, Que., one near Portage la Prairie, Man., and two at Taber and Josephburg in Alberta.

The facilities test Pickseed's own varieties as well as those from select competitors, governments and universities. It's part of the company's commitment to improving overall feed quality and production in forages.

"One of the ways we've always tried to differentiate ourselves is to select for forage yield — there's no question about that — but we're also selecting for forage quality," says Matt Anderson, lead researcher with Pickseed. The company has always had a strong research focus and with the acquisition by DLF-Trifolium, that interest has increased considerably.

"To some extent, there's always been a solid background and a strong emphasis on research within our forage portfolio. That's why it was such a good fit going from Pickseed to DLF because a lot of their beliefs are the same beliefs we had before as a private company."

Before the acquisition, Pickseed's Lindsay facility had up to 1,000 replicated trials per year. It's now performing 4,000 trials, and combined with the Port Hope location, Anderson oversees more than 7,000.

He says the additional trials make for better data.

"We have four replicates within each test, so we'd have the variety entered four times and randomized within the trial. We're measuring yield and feed quality from each of those plots, which makes our data more reliable, plus the fact that we're entering that same replicated trial at seven stations across Canada."

HarvXtra — beyond Roundup Ready

One of the more interesting advances in research and development is HarvXtra alfalfa, a unique double-stacked trait variety that combines Roundup Ready technology with a reduced lignin feature. It's part of a strategic alliance that Pickseed has formed with Forage Genetics International, the developers of the HarvXtra technology. It's intended to provide a wider harvest window, plus broad-spectrum weed control for difficult-to-control species such as chickweed.

"What that allows a producer to do is that because you have the reduced lignin, it'll allow a wider window for harvest, so you can delay for up to a week later and still maintain the same feed quality that you would have been doing on a 30-day cutting schedule," says Anderson. "Or you can harvest on your 30-day cutting schedule and the feed quality will be extremely high."

Pickseed has worked closely with Forage Genetics throughout the development of the technology. When

their initial idea was to launch single-trait Roundup Ready alfalfa with no reduced lignin component, Pickseed started testing in 2011. At that time there was no other company in Canada putting the seed into replicated trials.

In 2014, Pickseed then planted their first HarvXtra trials, and then put in another in 2015 and again in 2017.

"Again, we're taking three to four cuts off those trials per season, we're taking quality samples from every plot, numerous field observations — with disease being one of them," says Anderson. "But we're also looking at establishment, and the winter survival rates on those varieties, what's the regrowth — how quickly do those varieties come back after cutting?"

Good varieties need good management

Anderson says that Pickseed's motivation has never altered, even with DFL's acquisition. It's always focused on newer genetics and trying to increase feed yield and quality.

"The other side of that is where newer products like the HarvXtra alfalfa will come into play, and that's in determining how to increase production while at the same time decreasing your input costs," says Anderson. "Those two things combined will prove to be a huge advantage going forward."

Anderson agrees that forages have lacked not only research attention, but attention to good management.

"For the good managers who are out there, there have been improvements in seed genetics and breeding — there's no question about that," says Anderson. "But when you combine that and management, think of the level you can get to. That's what you really have to be paying attention to. If you're just going to fall back on the advances in breeding, they're not going to make up for a lack of attention in management. Management is the key."

He mentions items as simple as ensuring a firm seed bed. That can be missed in the rush to get the crop planted as fast as possible, but a firm seed bed will dramatically improve the stand during its three- or four-year lifespan.

A new species

The list of advances in breeding doesn't stop with HarvXtra. With the plots at Lindsay and Port Hope, Anderson is looking at red clover, white clover, birdsfoot trefoil, timothy, bromegrass, orchardgrass, tall fescue, annual ryegrass and perennial ryegrass.

All are entered into their replicated trials and follow the same guidelines as those for alfalfa: comparisons with current varieties from competitors and government or universities. They measure yield and quality as well as other observations on establishment and winter survival.

One of the other developing stories for Pickseed is the development of festulolium, a new grass species that consists of two hybrids. DLF-Trifolium is the developer. One hybrid is a cross of tall fescue and perennial ryegrass while the other is a cross of meadow fescue with Italian ryegrass. The tall fescue with perennial ryegrass hybrid has the appearance of the former, but has the feed properties of the ryegrass.

"If you're looking for a long-term stand that's going to persist, you'd go with the fescue-type of festulolium," says Anderson. "You're going to get a little more feed quality advantage than what you'd see with a straight tall fescue, but you'll also get a little more winter hardiness than you would have from just a perennial ryegrass alone. So when you're meeting in the middle, you're getting the best of both species."

The meadow fescue/Italian ryegrass festulolium hybrid looks more like a ryegrass, yet it's an annual crop so it's better for short-term and emergency forage situations, or as a good cover crop option. Growers opting for this will get a little bit more persistence than just an annual ryegrass, but still get the improved feed quality over meadow fescue.

"If you're just going to fall back on the advances in breeding, they're not going to make-up for a lack of attention in management. Management is the key."

MATT ANDERSON, PICKSEED

It may sound confusing but Anderson says growers who select one or the other to suit their operations will see huge advantages in stand improvements. It really depends on the duration of the crop that's desired.

"The fescues contribute qualities such as high dry matter yield, resistance to cold and drought tolerance persistence. Then the ryegrass will add more in terms of rapid establishment, good spring growth, good digestibility and higher sugar content."

Pickseed is also studying the potential for a hybrid bromegrass, a true cross between smooth bromegrass and a meadow bromegrass. As with the festulolium, researchers are trying to get the best of both varieties, including the yield of a meadow brome and the feed quality of the smooth brome.

There's also a hybrid ryegrass — a cross between perennial ryegrass and an annual ryegrass, although festulolium is expected to eclipse a lot of the ryegrass hybrids. ■

Festulolium is a new species consisting of two hybrids — crosses of different ryegrass species and different fescues.

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RETHINK PRODUCTIVITY

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By Reynold Bergen

STEPPING UP TO WHEAT-BASED FINISHING DIETS

Grain-based diets improve feed efficiency, but increase the risk of rumen acidosis. Rumen acidosis occurs when rumen pH drops below 5.6 for more than three consecutive hours. Severe or chronic acidosis is an animal welfare concern due to rumen damage, liver abscesses, lameness, and an economic cost due to compromised feed conversion and growth performance. Consequently, feedlot operators manage their feed bunks and feeding programs very carefully, particularly as cattle transition from forage-based backgrounding to grain-based finishing diets.

The risk of acidosis is influenced by grain type (wheat being a higher risk than corn, with barley being intermediate), the extent of grain processing, feeding frequency and bunk management. Group size and pen density are also factors, so research trials using individually fed animals may produce different results than trials where cattle are fed in larger groups.

Brittany Wiese, Greg Penner and co-workers at the University of Saskatchewan recently published the results of a trial partly funded by the Beef Cattle Research Council in which backgrounded cattle were transitioned to a wheat-based finishing diet at a commercial feedlot in southern Alberta (Defining risk for low reticuloruminal pH during the diet transition period in a commercial feedlot in western Canada *J. Anim. Sci. 95:420*).

What they did: A total of 998 crossbred yearling heifers and 907 steers were fed separately in eight pens averaging 249 heifers or 227 steers per pen. In each pen, four cattle were given a bolus to continuously measure and record rumen pH. Cattle were initially fed a backgrounding diet for 66 days (46.5 per cent corn and alfalfa silage, 38 per cent barley grain, 15 per cent DDGS, limestone, and mineral and vitamin premix), then stepped up over 40 days and five transition diets to a finishing diet (9.5 per cent corn silage, 80 per cent wheat grain, 10 per cent DDGS, and mineral and vitamin premix). Cattle were fed three to four times per day, such that bunks were "slick" (completely empty) at the end of the day. On days when the diet changed, the new diet was introduced at the second feeding of the day. Straw bales were added to the pen once when staff felt that cattle were experiencing digestive upsets. The boluses and pH data were recovered when the cattle were slaughtered at the end of the feeding period.

What they learned: As expected, increasing the level of wheat grain in the diet had the expected effects on rumen pH. In all cattle, pH dropped, became more variable, and pH spent more time below 5.6 as the cattle moved through the transition diets. On the first transition diet, pH averaged 6.4, cattle averaged 10 minutes per day at a pH below 5.6, and fewer than 10 per cent of cattle experienced between one and three bouts of acidosis (i.e. episodes where they spent 180 consecutive minutes below pH 5.6). On the finishing diet, pH averaged 6.1 and cattle spent an average of 157 minutes per day at a pH below 5.6. Over 40 per cent of cattle experienced one to three bouts of acidosis, and less than 10 per cent experienced seven to ten bouts of acidosis. Some cattle had bouts of acidosis on more than one diet; when added across the whole trial, 57 per cent of cattle had experienced one to three bouts, 20 per cent had experienced four to six bouts, three per cent had experienced seven to 10 bouts, and three per cent had experienced more than 10 bouts of acidosis.

What it means: Three things stand out for me. Cattle can be successfully transitioned to a wheat-based finishing diet with pH effects of a relatively mild severity, provided it's done carefully and slowly. By comparison, an earlier trial (*J. Anim. Sci. 92:3053*) adjusted cattle (35 head per pen) from 42 per cent to 81 per cent barley grain using four transition diets over 19 days with similar results; on the final diet, pH averaged 6.0, with cattle spending up to 195 minutes per day at pH below 5.6.

Another study where cattle were penned and fed individually as they were transitioned from 35 per cent to 85 per cent barley grain in five steps over 15 days reported an average pH of 5.8 with cattle spending more than nine hours per day at pH below 5.6 (*J. Anim. Sci. 83:1116*). This confirms that rumen pH measurements collected from individually fed cattle do not represent those experienced by cattle in pen feeding situations.

Cattle evidently vary considerably in their ability to cope with high-grain diets. Although 26 per cent of cattle in this study experienced four or more bouts of acidosis during this trial, 57 per cent experienced only one to three bouts, and 17 per cent experienced no acidosis at all. More research would be needed to determine whether these differences stem from their place in the pecking order, genetic differences, differences in the bacteria, protozoa and fungi in their rumen (i.e. the "rumen microbiome"), previous nutritional and health history, or some combination of all these things.

The Beef Research Cluster is funded by the Canadian Beef Cattle Checkoff and Agriculture and Agri-Food Canada with additional contributions from provincial beef industry groups and governments to advance research and technology transfer supporting the Canadian beef industry's vision to be recognized as a preferred supplier of healthy, high-quality beef, cattle and genetics.

Dr. Reynold Bergen is the science director of the Beef Cattle Research Council.

By Steve Dittmer

ON THE CUSP OF CHANGE

One thing Canadian cattlemen can be certain of, they are not alone in their concern regarding trade, its importance to agriculture, or how it will be handled by the new Trump administration.

At the U.S. cattle industry convention in February, anywhere from 250 to 400 cattlemen attended separate committee sessions on international marketing and export growth, as well as government policy sessions that dealt with beef exports.

I realize exports for American cattlemen are imports for you and the rest of the world, but outside of a few fringe groups, U.S. cattlemen realize trade is a two-way street. To export, we need to allow imports.

And with the U.S. beef industry in an expansion phase, expanded trade will be absolutely essential to offset that added beef coming onto the market, along with more pork and more poultry, to keep cattle and beef markets up.

Some analysis of testimony by key cabinet appointees and feedback on Trump's new agriculture secretary provide some clues. At this writing, agriculture secretary nominee Sonny Perdue has not testified before the Senate committee because his nomination was the last one made and his Senate confirmation will be last.

Trump's aggressive statements before his inauguration and his actions during his first weeks have given us some indication about how his mind works. It took him little time to approve construction of both the Dakota Access and Keystone XL pipelines, but he inserted language on the latter regarding the use of U.S. steel. He's also made some noise regarding what percentage of auto parts should be sourced from within NAFTA countries, not necessarily American parts, echoing the negotiations that went on with Japan during some of the final TPP negotiations.

His solution may not always start from scratch, although he has expressed a preference for bilateral trade deals. But he is used to putting deals together a lot faster than the five- to 10-year crawls of recent multilateral trade negotiations. A taste of that, plus pressure from cabinet officials, industries, unions and Congress, might make adding some tweaks from "Trump Overhauls" to NAFTA and TPP look more appealing to him.

Just because Trump has officially pulled the U.S. out of TPP, doesn't mean this agreement is dead. The other countries involved consider the deal much less appealing without the U.S. being involved, but it will not be dead until the remaining partners decide not to ratify it. If the TPP survives in some form perhaps the U.S. at a future date would seek to reopen negotiations in order to add some Trump chapters.

Next up on agriculture's list of trade actions is NAFTA. During his confirmation testimony Trump's commerce secretary, Wilbur Ross, indicated changes to NAFTA would be the first thing he would like to work on. His view is that borders should be open to countries that "play by the rules" but scofflaws "should be punished — severely."

This dovetails with Trump's nomination of Robert Lighthizer as U.S. trade representative, the office that is normally in charge of negotiating agreements. Lighthizer's comments so far, taken together with his past government service, indicates the U.S. Trade Representative under Trump may be more concerned with enforcement than negotiating new deals. Lighthizer was not known for building consensus in previous trade postings.

It is hard to tell to what degree Trump's tariff pronouncements are serious or simply a negotiating technique designed to soften up the other side before sitting down to the table. Ross acknowledged as much during his confirmation hearing.

"When you start out with the adverse party understanding that he or she is going to have to make concessions, that's a pretty good background to begin negotiations," he said. (*Washington Post*, 01/1/2017).

That gives us a pretty good idea of his and Trump's negotiating style.

Ross explained that he views tariffs as both a negotiating tool and a punishment for lawbreakers, rather than permanent protection. In the main, he claims he is pro-trade.

Frankly, I think misinformation and poor definitions cloud many trade discussions. Trade is buying something you want.

The term globalization, for example, depends on your viewpoint. You may see it as a grouping of countries under one centralized authority such as the European Union. Others use the term to refer to the advanced speed of communication and the ease of shipping goods and services worldwide, compared to centuries past. Still others use it as a codename for competition, as in the modern world brings global competition to one's door much faster and easier. Labelling it globalization doesn't make it go away, nor does it really provide cover for pretending it doesn't exist, or passing trade rules to keep it away.

Trump's nominee for agriculture secretary, Sonny Perdue, not only understands how important trade is to agriculture, he was actively engaged in it. The companies he controls of late are exporting businesses. As governor of Georgia, he pushed for economic growth and trade through the port of Savannah.

Georgia cattlemen familiar with Perdue also do not believe he would support the GIPSA rule I talked about a couple of issues ago. The rule is presently in abeyance under Trump's short-term prohibition of any new government regulations. But Perdue is believed to support the concept of paying premiums for quality as opposed to livestock producers getting paid the same, regardless of quality.

Steve Dittmer is the CEO of Agribusiness Freedom Foundation, a non-profit group promoting free market principles throughout the food chain. He can be reached at steve@agfreedom.ag.

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By Debbie Furber

BOEHRINGER INGELHEIM /MERIAL MERGER BUSINESS AS USUAL

Boehringer Ingelheim (BI) Canada says it will be business as usual as its head office works through completing its massive January merger with Merial, the animal health arm of Sanofi. In exchange Sanofi will receive BI's consumer health care business.

As a result, BI will move from sixth to second overall player in animal health worldwide; first in MetAsia (Africa, Middle East, Asia, Australia, Oceania) and second in Europe and North America. It will be a leading provider of parasiticides and biologics (including vaccines) with a presence in 99 countries, products in 150 countries, 24 research and development sites, 24 manufacturing sites and more than 10,000 employees.

"This makes a lot of sense," says Dr. Troy Bourque of Okotoks, Alta., president of the Canadian Veterinary Medical Association. "Without a parent company that is also a human health care company, a company can focus on animal health and that is always positive for veterinarians."

In Canada, BI and Merial will maintain their separate brands and sales and customer service staffs until the integration is completed.

Product brand names won't change during this transition period while the marketing and legal authorizations for product lines are being switched over. As it stands no service interruptions are anticipated.

This latest consolidation leaves us with 31 companies in the Canadian animal pharmaceutical sector, out of 103 in total since the 1960s, according to the Canadian Animal Health Institute (CAHI), the sector's trade association. Its current membership includes developers, manufacturers and distributors of animal health pharmaceuticals, biologics, feed additives and animal pesticides operating in Canada.

For example, 22 companies have been folded into the Zoetis brand, 12 under the Merck Animal Health banner, 11 for Elanco, seven for Vetoquinol and five absorbed by Bayer

"The changes are always interesting," says Bourque. However, he doesn't sense much concern within the veterinary community about consolidation within the animal health sector.

"We don't tend to see much change afterward," he explains. Generally, there's no dramatic increases in the cost of products. If anything, we've seen costs go down in some cases."

Customer service may get a boost with more representatives out and about the

countryside. Typically, company reps cover huge areas and when mergers happen, field support teams are often retained.

Sometimes mergers result in an overlap of products and some of them disappear. That might be offset by pooled research and development efforts toward bringing new or innovative products to the marketplace, or it could open the way for smaller innovative companies to develop products and become competitive.

CAHI president Jean Szkotnicki monitors this trend. Of the 21 companies with full CAHI memberships — those that market licensed medications with animal health claims — 11 are new firms that specialize in generic products. The institute's associate membership includes smaller companies still in the research-and-development stage with their first product and those that market natural-type products that require only a notification number from Health Canada to be approved for sale.

Most of these firms have risen out of the upheaval created by the merging of giant firms. Some pick up technology orphaned to satisfy competition rulings, or pick up product lines too small for the merged company to manage. Other chemical engineering companies have started with one product of their own design and expanded from there. Then there are the small domestic companies marketing generic lines, or discovery companies working on novel approaches to old technology.

"The cost of taking new products from research, through the testing required for licensing, to commercialization has skyrocketed in recent years so that more often than not, the merged company will rationalize its research and development dollars by cherry-picking products that are most likely to be successful and the others fall by the wayside," adds Szkotnicki.

A 2015 survey of the U.S. domestic market for HealthforAnimals, the global animal medicine association, found it took 8.5 years and an average $30.5 million to bring a new pharmaceutical product for livestock to market. One product cost $62 million.

There wasn't much new-product development in Canada in the 2011 survey.

But 14 companies developed pharmaceutical products with a new active ingredient in Canada during 2015 at costs ranging from $1.5 million to $85 million.

The Canadian cost to bring a new biological product to market ranged from $5 million to $25 million, $0.75 million to $5 million for medicinal in-feed products, and $5 million for a new pesticide product.

The cost of establishing new species uses for existing pharmaceutical products ranged from $2 million to $50 million and biological products averaged $6.5 million.

The main reasons international companies give for not commercializing existing products in Canada is pressure from competitors , imports of non-approved competing products, own-use imports and active pharmaceutical ingredients, the small size of the Canadian market, and regulations for maintaining or extending licenses.

The average time it took to get a livestock product through Health Canada's Veterinary Drugs Directorate in 2015 was 2.1 years.

A major cost hurdle for Canadian companies is the fact they spend about 40 per cent of their research and development budget on mandatory defense, compared to two to six per cent in the U.S., China, Brazil and Australia.

NEW FORMULATIONS CHANGE DEWORMER OPTIONS FOR PRODUCERS

Over two decades, internal parasite control in cattle on western Canadian pastures moved from "not necessary" to "routine" for progressive cow-calf producers.

While the presence of internal parasites in cattle is often inapparent, removing the economic burden they represent is now an integral component of health management in many herds.

Reasons for the shift toward incorporation of internal parasite control in health management programs include:

- Economic studies that clearly demonstrated deworming pays.
- Evidence that parasite resistance to all deworming products can emerge, rendering haphazard approaches to parasite control unsustainable.
- Critical evaluation of factors related to the association between reproductive efficiency and parasitism in beef herds.
- A better understanding of all factors affecting immunity and health of the beef cow and growing calf.
- Recognition that cattle dewormed in an organized and rational manner through the year produce more milk, make better use of summer range and winter forage, develop stronger immune systems, maintain better body condition scores, and exhibit improved reproductive performance, especially as it relates to fertility of replacement heifers.

Through sound deworming practices, producers have an opportunity to improve weaning weights and the reproductive potential of replacement heifers. Veterinarians understand what deworming products are available and where they are best put to use. There is also the realization that haphazard, unstructured use of deworming products grows increasingly unacceptable to consumers and society.

To capitalize on the greatest return through deworming, timing of treatment becomes very important. An underlying goal of sustainable parasite control is to limit the economic consequences of internal parasitism, without trying to kill every worm.

Most deworming programs are based on the reality that infection risk increases when cattle are turned onto spring pastures. With some parasite species, Ostertagia being a prime example, the parasites become hypobiotic (nonactive) and encyst in the abomasum during cold or dry seasons and re-emerge when conditions for their survival improve. The rate and timing of emergence governs the clinical impact of parasitism.

It is generally agreed that Ostertagia ostertagi, or the brown stomach worm, is the primary nematode parasite causing production losses in mature cows on ranches and farms in North America. Ostertagia can cause significant production losses, severe disease and even death in all classes of cattle. Cooperia, a second important parasite species, often becomes the predominant species in calves. Haemonchus, a third species, becomes a serious problem under certain conditions.

Producers often consider deworming calves, grass yearlings and replacement heifers a higher priority than cows. Those who treat cows regularly tend to decide how and when to treat based on convenience, tradition and cost, rather than on outcomes. Treating cows often takes place when they are in the chute, rather than at strategic times based on biological factors. The ideal sits somewhere between what is optimal and when ranchers can get it done.

Low-quality forages amplify the effects of parasitism. As well, the parasite load is not uniformly spread across a cow herd. It has been shown that 20 per cent of cows in a herd may harbour 80 per cent of the parasites and that clinical signs of parasitism often vary between animals.

The number of approved products presently available has made the process of deworming easier. Pour-ons, injectables, drenches, and feed additives have significantly extended the anti-parasitic formulary and added important options for inclusion in strategic deworming programs. It is advisable that producers stick with products approved for use in Canada and avoid cheaper imported generics often imported under "own use" provisions presently accessible to producers.

There is no single product class effective against all internal and external parasites. Veterinarians are a valuable resource in tailoring parasite control programs for producers. Integrating choices around the right product administered at the right time for the right reason transformed parasite control into a planned component of health management programs. Some of the choices include:

- Eprinomectin (injectable): The first extended-release injectable cattle dewormer offering season-long parasite control. The product is now available in Canada. Eprinomectin offers cattle producers the option of a single treatment at turnout with effects that last up to 150 days. Theraphase Technology creates an initial therapeutic peak of eprinomectin quickly following injection with a second burst at about 70 days post-injection. Superior average daily gains in calves, grass yearlings and replacement heifers have been reported over the entire grazing period.
- Ivermectin (pour-on, injectable): The original macrocyclic lactone class of endectocide. Effective pour-on formulations changed the face of internal and external parasite control. Wide-scale, indiscriminate use of systemic pour-ons for all forms of parasite control has attributed to emergence of resistance in some areas. Import of inferior, non-approved U.S. generics by producers under Canadian "Own Use" provisions has not helped.
- Fenbendazole (solution, feed formulation): Feed formulations containing fenbendazole administered in complete feed so cattle consume a dosage of five mg fenbendazole per kilogram of body weight in a single feeding or intermittently over six days. Canadian approval of feed formulations for cattle added a new approach to parasite control in Canada.
- Cydectin (pour-on, injectable): contains moxidectin.
- Synanthic (oral suspension): contains oxfendazole.
- Valbazen (oral suspension): for use in cattle, sheep, and goats for the removal and control of liver flukes, tapeworms, stomach worms, intestinal worms, and lungworms.
- Dectomax (pour-on, injectable): Contains doramectin for broad-spectrum control of internal and external parasites.

Dr. Ron Clarke prepares this column on behalf of the Western Canadian Association of Bovine Practitioners. Suggestions for future articles can be sent to Canadian Cattlemen (gren@fbcpublishing.com) or WCABP (info@wcabp.com).

By Steve Kay

TRUMP DELIVERS TRADE BLOWS

President Trump quickly shattered any final hopes U.S. cattle producers had that he would relent on his pledges to withdraw the U.S. from the Trans-Pacific Partnership or leave NAFTA alone. Now they and other ag groups will have to persuade the administration to open up export markets in other ways as quickly as possible.

Many groups expressed dismay after Trump's executive order over the TPP. But U.S. participation had died during the presidential election campaign, as both Trump and Hillary Clinton vowed to withdraw. With the TPP dead, the U.S. industry now realizes it must push hard for bilateral trade deals, especially with Japan. The U.S. beef industry is losing an estimated US$400,000 in sales per day there.

Of more concern is that Trump also affirmed another campaign pledge, to renegotiate the North American Free Trade Agreement. The fear is that anything more than minor changes might damage the industry, as it is highly integrated with Canada's and Mexico's.

The beef industry will be hoping that bilateral deals might lead to a start to reduce the 38.5 per cent tariff that Japan imposes on U.S. beef (and Canadian beef). The Trump administration says it will begin negotiating bilateral trade deals with the countries in the TPP agreement. TPP includes 11 other countries in the Asia-Pacific region.

The National Cattlemen's Beef Association, the North American Meat Institute and the U.S. Meat Export Federation all hope this will occur. USMEF remains fully committed to its valued trading partners in the TPP and NAFTA, says president and CEO Phil Seng. These countries account for more than 60 per cent of U.S. red meat exports. In some of these key markets, the U.S. red meat industry will remain at a serious competitive disadvantage unless meaningful market access gains are realized, he says.

NCBA is especially concerned that the administration is taking these actions without any meaningful alternatives in place that would compensate for the tremendous loss that cattle producers will face without TPP or NAFTA, says president Tracy Brunner. Sparking a trade war with Canada, Mexico and Asia will only lead to higher prices for American-produced beef in those markets and put American producers at a much steeper competitive disadvantage. Ninety-six per cent of the world's consumers live outside the U.S. Expanding access to them is the single best thing the U.S. can do to help cattle-producing families be more successful, he says.

The Canadian Cattlemen's Association also weighed in on President Trump's decisions. The economic benefits of Canada-U.S. agriculture trade are clear, it says. Canada is the largest export customer for almost all large U.S. agricultural-producing states, purchasing around $714 per capita of U.S. agricultural products, while the U.S. purchases around $69 per capita of Canadian agricultural products. Canada is the U.S.'s top customer for overall trade, purchasing more than China, Japan and the U.K. combined, and Canada is its closest ally. Prime Minister Justin Trudeau has indicated that Canada welcomes a negotiation to update and improve NAFTA. As for the U.S. withdrawing from the TPP, CCA has encouraged the Government of Canada to pursue alternate plans, including completion of a Canada-Japan agreement to ensure Canadian beef producers get the trade access they need.

NCBA president Brunner in his comments noted that the TPP and NAFTA have long been convenient political punching bags. But foreign trade has been one of the greatest success stories in the long history of the U.S. beef industry, he added. Now it's up to him and other industry leaders to persuade the Trump administration to build on rather than further undermine that success.

A North American view of the meat industry. Steve Kay is publisher and editor of Cattle Buyers Weekly.

Canadian Cattlemen THE BEEF MAGAZINE

VBP+ CONNECTS BIG GROWTH FROM DATA

New VBP database part of new era for beef connectivity

This year more Canadian beef will be marketed with a tag of some aspect of sustainability than at any time in our history.

Thanks in part to a new Verified Beef Production Plus (VBP+) database, the players will soon be able to prove that.

For years Canadian agriculture has collected all sorts of data on farm and food production and the beef industry is no exception. But the track record shows that data simply has not been used as effectively as it should.

That is changing across all of agriculture with a new era of data connectivity. Beef is a big part of that growing potential. Today there are more brands involved and more industry interest in serving a consumer more interested than ever before in how their food is produced.

MORE ROBUST OPTIONS

"VBP has always internally tracked registered cattle operation participation," says Andrea Brocklebank, executive director of the Beef Cattle Research Council, the body that oversees the VBP+ program. "But this secure database has been updated as part of the move to Verified Beef Production Plus."

VBP+ added new modules for biosecurity, animal care and the environment to the original mandate of on-farm food safety. The goal was to give the industry a much more robust definition of sustainability.

Andrea Brocklebank: New era for data in sustainable beef.

Correspondingly, the information from this expansion now has more value.

TARGET BEEF STREAM

This is all about leveraging the data in the marketplace, says Brocklebank. The target is the verified sustainable beef stream.

The new world of data connectivity brings together more players. In a manner that respects producer privacy the end-users will not know the names of the cattle operations, just if cattle are supplied from a registered VBP+ operation.

As cattle are marketed, RFID numbers can be linked at the carcass level in the packing plant. Those cattle can be identified as to whether or not they came from a VBP+ registered operation. That information can then be used by a food company to prove that a certain percentage of their purchase on a net basis comes from a verified sustainable beef production program.

In addition BIXS has the potential to work in partnership with various players in the value chain to produce custom production and marketing programming around that data.

"It's important for VBP participants to know that all of this is completely under the producer's control," says Brocklebank. "The VBP-status in the VBP database belongs to them and is only used with their permission."

KEY PRODUCER INTEREST

One question comes up perhaps most often in the VBP+ growth. If producers are looking after ensuring their beef is produced sustainably, who is looking after whether they will get credit for that effort?

"Nothing happens without effort and capturing the alluring potential of data connectivity in the beef chain is still a work in progress," says Brocklebank. "But producers should take careful note of the progress that is taking place today, the market interest, the development of the Canadian Roundtable for Sustainable Beef, and new activity that supports this.

"Momentum is growing. Never before has participation in VBP+ had more potential to drive a difference in the market and back home on the farm."

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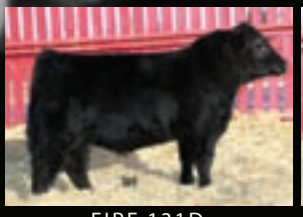

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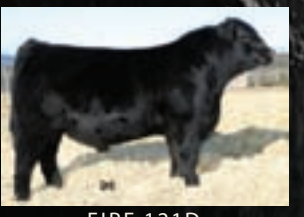

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By Brenda Schoepp

TRADING PLACES

There has been much discussion on protectionism as we watch the trumping of the TPP and look at NAFTA with sorrowful anticipation. What is the importance of huge trade deals and why should we examine them now?

The largest global trade body is the World Trade Organization (WTO), which is a negotiating body established in 1995. The WTO succeeded GATT, established in 1947, as a foundation for the now 164 member countries (Afghanistan was the last to join) to be governed in a binding agreement for goods and services, which represents 64 per cent of global trade.

The agreement allowed for regional trade agreements (RTA) that have grown in power and size within the WTO, but many view the WTO as a centre for dispute, a mechanism that is allowed under the regulations. Trade is based on access and access is determined by tariff and non-tariff barriers. In other words the WTO ensures, by consensus, that everyone plays by the rulebook.

Non-tariff measures can be such things as sanitary and phytosanitary or technical barriers which fall outside of the common guiding principles within the agreement. The argument of the importing country is for the protection of people, plants and animals, which makes sense, but over 50,000 of these non-tariff barriers have been implemented since 1995. Both price-based and non-price-based measures play into active trade. For countries wanting access to Canada as an example, they see the behind-the-border restrictions on food ingredients as protectionist and lobby for access. For Canada, we can relate in the beef industry to country-of-origin labelling as an example of behind-the-border restrictions deemed protectionist.

Bilateral trade agreements have tremendous power and an example is the free trade agreement between China and South Korea. They can benefit trading partners outside of the agreement or there can be consequential costs. An aftershock effect of that deal was felt in the Canadian and American market in hides, which represents 80 per cent of credit value. China started accessing more hides from South Korea at a time of a slump in demand and North American values dropped, ultimately putting heavy pressure on cattle prices.

Russia, as a member of the WTO since 2012, is keeping ties with trading partners that are important to them in agriculture and energy. Maxim Chereshnev, Russian trade and economic development chair, reflected on trade possibilities while in India this past November: "The most significant spheres for interacting are agriculture, medicine, science and technology. Furthermore, development in the energy sector has become the heart of Russian export policy." (WTC 2015) If agriculture and energy are priority exports for Russia, which has yet to begin to tap its potential, we might expect that they will be knocking on our door and, in particular, at the threshold of those counties we have strong trade deals with, such as the U.S.

There is indeed a sense of urgency in my mind, for an assertive trade mandate. Should we be going long with global trade agreements that take years to negotiate or going fast with binding bilateral trade agreements that are a little more product specific and solidify our position before the competition heats up or trading partners put on all their protectionist armour? With near trade balance with fully developed countries such as the U.S. and developing countries such as India, we still do suffer a trade deficit particularly in agri-food. Some level of behind-the-border is always required for food products. Unfortunately, Canadian manufacturers often experience the opposite. The federal government recently announced the removal of $48 million in tariffs for food ingredients to benefit the food processing industry. But the list was reflective of products we have in Canada and will disadvantage Canadian ingredients. These disconnects can have a greater impact on production and economic growth than even the most robust trade agreement.

I have often wondered, outside of the argument of job creation, why trade agreements are strongly opposed. The demographic of trade is the supporting argument with 70 per cent of deals made between developed countries in large trade agreements leaving other member countries without the full benefit of trade agreements they are part of. Behind-the-border barriers are frustrating for developing countries and the long road to ascension within a trade agreement can be costly.

The goal of emerging economic powers such as BRICS (Brazil, Russia, India, China and South Africa), is to have stronger arbitration within trade agreements. This warrants attention as BRICS members contribute 30.8 per cent of world economic output, represent 30 per cent of global land mass and house 42 per cent of the world's population — and they are busy. India, for example, has already signed bilateral investment treaties with 83 countries.

CETA is on the table and the WTO is not a threat or threatened and plays an important role in dispute resolution and in guiding principles. But I question if the speed of negotiation can keep up with the speed of commerce. There is much more happening than what we hear about. Canada currently has 54 signed trade agreements with a host of partners.

The question of whether the dilution of trade agreements is protectionist may be moot, considering the need for higher value-added products and recognizing that the speed of commerce outpaces negotiation. The underlying question of whether or not preferential access is truly fair remains unanswered, yet is an important discussion in regard to global food security. How we navigate the next few months will set the tone for our future economic stability and will be a reflection of our desire to truly trade places with our past ideology on historical agreements.

Contact Brenda through her website: www.brendaschoepp.com.

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By Dan Darling

UNLEASHING OUR GROWTH POTENTIAL

Dan Darling is president of the Canadian Cattlemen's Association

Those of us in agriculture understand the importance of the industry in terms of economic contribution to Canada's GDP but oftentimes it seems that clout is overshadowed by other equally key industries. That's why I was pleased to see agriculture featured prominently in the recent Advisory Council on Economic Growth report. The report, Unleashing the Growth Potential of Key Sectors, contains recommendations to promote growth in all areas of the Canadian economy by identifying and then addressing major obstacles and barriers preventing some sectors from realizing their full potential.

In the report, Agriculture and Food is recognized as one of eight sectors in Canada deemed as potential candidates for a strategic approach whereby government and the private sector work together to create the policy actions and infrastructure needed to remove identified barriers and obstacles and help unlock sector potential. Energy and renewables; mining and metals; healthcare and life sciences; advanced manufacturing; financial services; tourism and education were also on the list. However, the report selected the agriculture sector as an example of what this targeted approach of the government in concert with the private sector could look like, and suggested a pilot could get underway this year.

The advisory council said it will talk with sectors about identifying major obstacles to growth. The CCA intends to follow up with them in that regard. Much of the messaging in the report is consistent with CCA's messaging and the input CCA delivered to the advisory council, particularly in terms of increasing exports, meeting labour needs, research, the Canadian Beef Advantage and our focus on sustainable beef production. Moreover, the report's vision echoes the industry's National Beef Strategy, and the recommendations are similar to the Agri-Food Competitiveness Council the CCA participated in during the early '90s, a process which did develop some useful regulations and policy recommendations.

The report comes just as Canadian Cattlemen's Association (CCA) representatives returned from the National Cattlemen's Beef Association (NCBA) annual convention, where the importance of sound trade policy to unfettered access was a key topic. In addition to the NCBA convention schedule of events, CCA participated in several additional meetings, including a session with the beef industry leadership from the U.S., Mexico and Canada.

At the trilateral meeting NCBA, CCA and Mexico's Nacional de Organizaciones Ganaderas (CNOG) presidents reaffirmed the North American Free Trade Agreement (NAFTA) is beneficial for all beef producers, reflecting the integrated nature of the North American beef industry. I also expressed the importance of continuing to work towards simplifying trade between Canada, the U.S. and Mexico.

The trilateral leaders' discussion focused on U.S. President Donald Trump's stated desire to renegotiate NAFTA and his withdrawing the U.S. from the Trans-Pacific Partnership (TPP). These actions reflect the new reality that the U.S. administration will pursue bilateral trade agreements in place of broader regional or multi-lateral initiatives.

Discussion briefly focused on the proposed 20 per cent tax on Mexican imports to the U.S. and the work NCBA is doing to educate the administration on how this would cripple the U.S. economy and cause massive U.S. job losses. CCA noted that it will be a major focus for Canada in the months ahead to use every opportunity to draw attention in the U.S. to the importance of Canada-U.S. trade and how the Canadian government has recently shuffled its cabinet with a view to doing just that. With the U.S. withdrawing from the TPP, the CCA has encouraged the Government of Canada to pursue alternate plans, including completion of a Canada-Japan bilateral agreement or seek a revision to the participation formula necessary to bring TPP into force.

The Trump administration has also provided a welcome opportunity in the form of the so-called "Two for One" executive order on regulatory policy whereby U.S. government departments must eliminate two existing regulations for every new rule they create. The announcement of U.S. Secretary of Agriculture Sonny Perdue is also very welcome given his experience in the agriculture sector and experience with the benefits of trade. The intention of the Trump administration to appoint an undersecretary for trade at the U.S. Department of Agriculture (a position that Congress created years ago, which has previously been left unfilled) should be helpful as well.

The CCA team in Nashville also met with representatives from Cargill and Tyson and had good, productive meetings to better understand how we can co-operate with these important buyers of Canadian cattle on our common priorities for the year ahead.

The CCA will work closely with Canadian government officials and the embassy in Washington and consulates across the U.S. to ensure that the interests of Canadian beef producers are well represented as the Trump administration moves forward.

Finally, I would like to thank Canada's beef producers for continuing to step up to the plate in 2016 regarding bovine spongiform encephalopathy (BSE) surveillance. A total of 27,346 samples were submitted for testing in 2016, all of which tested negative. Although this annual total once again fell short of Canada's target number of 30,000 annual samples (a target established in 2003), this is a welcome result given Canada's shrinking herd and other challenges to meeting the annual target. Maintaining a credible level of BSE surveillance to demonstrate that Canada's control measures are effective and are working towards eradicating the disease is important.

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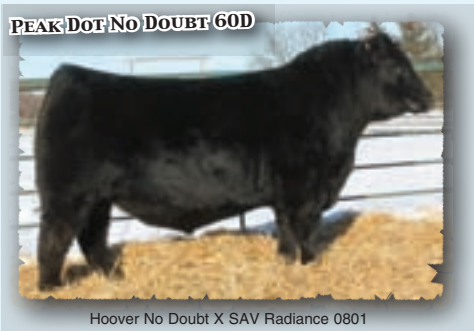

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NewsRoundup

ASSOCIATIONS

Saskatchewan will introduce new national levy after April 1

The Saskatchewan Cattlemen's Association's upcoming year will continue to revolve around connecting with producers and consumers.

"It's many little things that add up," says Ryan Beierbach, who was returned by the board for a second term as chair.

A regular e-newsletter providing expert speakers for special marketing meetings and the fall district meetings are new initiatives aimed at reaching producers with timely marketing and production information that can help put more money in their pockets, he explains.

Reaching out with social media, messages on a popular talk radio show, news releases, periodic mail-outs to rural box holders, partnering with retailers and restaurants to support beef sales, producing resources detailing beef production for the website, and the hugely successful virtual ranch tour are some examples of the new initiatives that target broad audiences.

Marianne Possberg was hired last year to fill the newly created position of beef production specialist. She co-ordinates extension efforts to extend research findings to producers and connect with researchers who can carry out projects aimed at boosting productivity and profits.

The SCA's Feeder Cattle Marketing handbook provides resources and contacts for potential buyers in Eastern Canada and the U.S. so it is easier for them to seek out and bid on Saskatchewan feeder cattle.

Beierbach is encouraging producers to participate in the new national Verified Beef Production+ program to help the SCA establish a one-stop shop for customers looking for verified beef raised to specific standards.

SCA staff are working with others across the country to be sure that Verified Beef + matches up with the criteria for verification under the protocol being developed for the Canadian Roundtable for Sustainable Beef.

Beierbach is also urging producers to take a long look at what the Western Livestock Price Insurance Program has to offer. Signing up so you are eligible to take out a policy doesn't cost anything and is one way producers can show their support for the program, and aid SCA's

Saskatchewan Cattlemen's Association 2017 board of directors. Front row (l to r): Rick Toney (vice-chair), Gull Lake; Bill Jameson (past chair), Moose Jaw; Levi Hull (executive member-at-large), Willowbrook; Joe Jackson, Moose Jaw; Arnold Balicki (finance chair), Shellbrook. Middle row (l to r): Laurie Disney, Rockglen; Bill Huber, Lipton; Brad Welter, Viscount; Paula Larson, D'Arcy. Back row (l to r): Mike Spratt, Melfort; Ryan Beierbach (chair), Whitewood; Garret Hill, Duval; Chad Ross, Estevan; Keith Day, Kyle; Ryder Lee (CEO). Missing are Dean Moore, Paradise Hill, and Harold Martens, Swift Current.

efforts to ensure that it will be funded in the next agricultural policy framework agreement.

Forage insurance is another program that could use a boost of producer support. The SCA is working with the provincial government to put the program on an even playing field with crop insurance. The cap on variable-price hay insurance was removed last summer, but finding an effective model to insure pasture production is a complex problem.

On another front, the SCA members agreed to lobby both levels of government for a program that recognizes and pays agricultural producers for the carbon sequestered on their grasslands.

This will take a good deal longer than making a few phone calls to the right person. The first step, says Beierbach, is to be sure the existing research on carbon sequestration is solid. Then the SCA must approach the federal government to recognize the research as being accurate. And finally Canada must convince the International Panel on Climate Change to recognize carbon sequestration on grasslands at the international level before it can be included in the Canadian formula for calculating carbon sequestration. The formula currently recognizes grasslands as neutral.

The SCA's initial $1 million investment in the new Livestock and Forage Centre of Excellence southeast of Saskatoon is starting to bear fruit as work has begun on the new feedlot and barn and a fundraising committee chaired by SCA CEO Ryder Lee is seeking out private funding to complete the remaining phases of the centre.

The SCA has also approved funding to research ways to mitigate the environmental impact of feedlots. SCA members who sit on the board of the Beef Cattle Research Council are part of a team evaluating research priorities for the entire beef industry that will be sumitted for funding under Growing Forward 3.

The SCA will also be implementing the increase in the national checkoff from $1 to $2.50 per head of marketed cattle as approved by its members at the 2016 AGM. The increase will take effect after

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the appropriate provincial and national levy orders are amended to reflect the increase, which could be anytime between April 1 and the start of the SCA's new fiscal year on August 1.

In the meantime, the association will be taking steps to promote the importance of the higher checkoff to fund beef research and promotion, and the requirement to begin collecting the levy on private treaty sales of commercial cattle and breeding stock. When the seller and purchaser reside in the province, the buyer will be responsible for deducting the levy from the amount payable to the seller and submitting it to the SCA. For inter-provincial sales, the provincial associations have agreed that the buyer must identify the province where the seller resides so the National Checkoff Agency can return the levy to the seller's provincial association.

A change enacted last year requiring producers to contact the SCA office for the form to request a refund of the provincial checkoff has been an effective way of engaging them in discussions about the value of contributing. Refunds in 2016 were down nearly $20,000 from 2015.

A full explanation of the levy policy and the SCA annual report are posted on the association website, www.saskbeef.ca.

ASSOCIATIONS

Manitoba aims to increase its beef herd

Manitoba Beef Producers (MBP) head into this year with hopes of expanding the provincial cow herd, preparations being made to deal with full traceability, and plans to lobby for fairness to producers as governments move forward with plans for a carbon tax.

The association is also preparing for the introduction of the $2.50 per head national checkoff sometime this summer, an increase from the current $1 per head levy that was approved by producers at the last annual meeting of the MBP.

"Our main job this year as far as increasing the number of beef producers on the landscape will be letting people know that beef production in Manitoba is a really good thing and our organization is here for them and working to make it profitable," says MBP president-elect Ben Fox.

The new Conservative government's minister of agriculture, Ralph Eicher, announced last summer that he would like to see the cow herd increase from approximately 485,000 head today to its pre-BSE level around 750,000.

The MBP board of directors followed through on its commitment to gather ideas from its members at fall district meetings on how this might be accomplished. Four themes came out of those meetings: find ways to make beef production more economically predictable; gain access to more Crown acres; attract new producers and secure labour to help existing producers grow their herds.

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Several resolutions addressed specific hurdles that would need to be overcome to support an increase in the beef herd.

Regarding access to Crown lands, members favour giving the minister of agriculture oversight and control over agricultural Crown lands. There was also some agreement on the need for a more flexible process to transfer Crown lands between producers to ensure that it is being used effectively.

The need for improved maintenance of existing drains on Crown and private lands was raised as a barrier to the use of these acres. Beaver population control would have to be another part of the package along with properly managed watersheds to reduce or prevent recurrent flooding of valuable forage land.

There was unanimous agreement that the current model for funding education is outdated and unfair to farmers, and no doubt acts as a deterrent to potential new entrants looking to invest in the beef business. Property ownership has no bearing on the ability to pay tax, and the members urged their association to continue to lobby government to remove the property tax from farmland and buildings involved in farm production.

Members also approved of the role the MBP has to play in educating producers about the implementation plan agreed

Manitoba Beef Producers 2017 board of directors. Back (l to r): Dave Koslowsky, Killarney; Heinz Reimer (past president), Steinbach; Ken McKay, Fisher Branch; Larry Wegner, Virden; Bill Murray, Makinak; Stan Foster, Benito; Robert Metner of Moosehorn taking over from retiring director Caron Clarke, Ashern; Gord Adams, Deloraine; Larry Gerelus, Shoal Lake. Front row (l to r): Tom Teichroeb (second vice-president), Langruth; Dianne Riding (secretary), Lake Francis; Ben Fox (president), Dauphin; Ramona Blyth (first vice-president, MacGregor; Peter Penner (treasurer), Winkler.

to by the industry and government for full traceability, and explaining the necessity of premises identification and movement reporting documents.

If this industry-negotiated plan fails, Fox fears the government

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will enact far less farmer-friendly regulations requiring the reading of tags each time animals move out of a premise.

Seven districts brought resolutions forward dealing with climate change and carbon sequestration.

In light of the requirement for a carbon tax imposed by the federal government, the producers asked the MBP to lobby the province to implement an Alternate Land-Use Services program to provide payments to agricultural producers for measurable increases in carbon sequestration and any environmentally sound practices that retain additional water on the land they manage.

Other resolutions called for an exemption from carbon taxation on all agricultural-related inputs and for the MBP to urge government to take no steps toward reducing CO_2 emissions that are out of step with those in the U.S. The aim of the motion was to avoid any repercussions by the U.S. that might damage the competitiveness of Canadian agriculture and the rural economy.

Fox says he was honoured by the directors confidence in him to lead the organization for the coming year. He feels he is ready to face the challenges ahead. He comes into his new role having served four years as district director during which time he served on the executive as first and second vice-president and secretary, as well as chair of the animal health committee, vice-chair of the Crown land committee and as a member of the governance committee. He is also the alternate representative to the National Cattle Feeders' Association and co-chairs the Manitoba TB task force.

Fox brings depth of knowledge to the table as a rancher and cattle buyer for JBS. He was raised on a purebred Hereford operation near Lloydminster, Sask., and formally educated at Oklahoma State University. In 2006, he and his wife, Linda, moved to the Dauphin area where they run their diverse operation under the name of Justamere Ranch. He's proud to be able to say that their four children are now the fifth generation of the Fox family to be involved in primary production.

ASSOCIATIONS

Three families honoured by SLA

The current Saskatchewan Livestock Association representing all the cattle, horse, sheep and swine breeders in the province was formed in 1975 to replace the Saskatchewan Livestock Board, but the honour rolls it presents to farm families who have made outstanding contributions to the livestock industry, their communities and the province date back to the first recipient Hugh McKellar in 1927.

The three latest recipients who received their honour rolls during the recent Saskatchewan Beef Conference in Regina are: Bob and Marjorie Blacklock, Saskatoon; Bob and Janet Jackson, BoJan Enterprises, Sylvania; and Ted and Olive Perrin, Perrin Ranching, Beechy.

Bob and Marjorie Blacklock, Saskatoon, are well-known for their longtime connections with the Angus breed, livestock marketing, and livestock insurance businesses. They operated M Double B Livestock, a registered Angus operation and sale management company. Bob was an active partner in the Saskatoon Auction Mart from 1979 to 1996 and the couple took ownership until 2007. They were early partners with Farm Credit on the Alliance Program, operated the Stockmen's Assistance Finance Company from 2003-2014, and continue to operate Stockmen's Insurance. He is a past president of the Saskatchewan Angus Association and the Livestock Marketers of Saskatchewan.

Bob and Janet Jackson, BoJan Enterprises, Sylvania, Sask., have spent 40-plus years contributing to the promotion of the Charolais breed in Canada. He is currently the field man for the Saskatchewan Charolais Association and has been a director and president of the association as well as a director and executive member of the Canadian Charolais Association. Bob has served on several Agribition committees as a director and as barn boss for 10 years, while Janet managed the Charolais General Store. He spent 18 years on Farm Credit's appeal board, 15 years on the Sylvania school board, and 30 years as councillor for the RM of Tisdale, 10 of those as reeve, while Janet completed a 23-year career in nursing.

Ted and Olive Perrin of Swift Cur-

Bob and Marjorie Blacklock

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Bob and Janet Jackson

rent are widely known as advocates and ambassadors for agriculture, opening Perrin Ranching at Beechy to many trail rides, agricultural organizations and international bus tours through the years. Ted was on the boards of the provincial and national

Ted and Olive Perrin

Charolais associations for six years each, a 14-year director of the Saskatchewan Stock Growers Association and its representative on the Prairie Conservation Action Plan. The couple received the Environmental Stewardship Award in 2004, the Duke of Edinburgh Habitat Conservation Award in 2005, and an award for outstanding achievement for range management in 2006. Olive was the driving force behind starting the Saskatchewan High School Rodeo and the Snakebite Riding Arena Club, alongside being very active in local housing and care-home initiatives.

MARKETPLACE

ANSWER OUR SURVEY — and have a go at winning one of our caps

We have a goal to be the best beef cattle magazine in the business. But we need your help. If you could just fill in this survey and return it to me, you would be helping us set the future editorial direction for Canadian Cattlemen. All you have to do is tell me what you like about the magazine, and what you don't like. There's also some space for you to tell us what you would like to see in future issues.

CLIP AND ENCLOSE YOUR MAILING LABEL. Each month, we will draw one name from all the surveys sent in and send that person a Cattlemen cap. It could be you!

We'd appreciate it if you could tell us a little about yourself. It makes it easier for us to keep your main interests in focus

☐ I'm ranching or farming

Enterprise	# of head
Total beef cattle	
Yearlings on feed/pasture	
Registered cows	
Fed cattle (sold yearly)	
Commercial cows	
Horses	
Calves on feed/pasture	
Other livestock	

☐ I no longer take an active part in farming

If not an owner/operator of a farm, are you:

☐ In agribusiness (bank, elevator, ag supplies, etc.)
☐ Other (please specify)_____

My approximate age is:

☐ a) Under 35 ☐ b) 36 to 44 ☐ c) 45 to 54
☐ d) 55 to 64 ☐ e) 65 or over

What do you think of: On a scale of 1 to 5, how do you and your family like these features?

5 – I *always* watch for it; let's see more of it
4 – I *regularly* read it and like it
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1 – I *don't want* it; get *rid* of it

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Letters

NEW REGS CREATE OLD PROBLEM

I read with interest Gren Winslow's comments on the new regulations on the humane transportation of cattle (*Canadian Cattlemen*, pg. 4, February 2017).

How history repeats itself. In the mid-1970s there was great concern about transportation times on rail transport of feeder cattle from Western Canada to Ontario. At that time the maximum time for movement without rest, feed and water was 36 hours. This necessitated offloading at Winnipeg for several hours and this increased the length of time the animals were between the previous and the new owner. The practical view of producers was that the sooner these cattle could get to their final destination, and in the care of their new owners, the better for them. Research was conducted with the full involvement of the Ontario Humane Society and, on the basis of that research, the regulations were changed to permit up to 52 hours in transit, as long as the cattle arrived at their final destination within that time limit. This permitted cattle to move out of places as distant as Alberta all the way to their final destination and the result was healthier calves upon arrival. The new regulations will inevitably create the same problems as were addressed and resolved in the late 1970s.

Charlie Gracey, Ancaster, Ont.

By Mike Millar

PurelyPurebred

Suggestions are always welcome. My phone number is **306-251-0011**
Email: **mike.millar@fbcpublishing.com**

Jacob Onyschuk

■ Jacob Onyschuk is the new director of business development for the Canadian Hereford Association. He spent the last four years with Northlands in Edmonton growing the number of purebred cattle entries at Farmfair International. He graduated from the University of Alberta in 2013, with a BSc in agriculture and a major in animal science. Prior to graduation, Onyschuk was an active member of 4-H Alberta and a Premier's Award recipient in 2012. After his 4-H career, Onyschuk continued to expand his commercial cattle herd at his farm in Westlock County.

■ The Canadian Simmental Association (CSA) has reported that a blue-backed Simmental RFID tag should be available this spring, pending final approval from the CFIA. A personalized back button will help identify Simmental-influenced cattle in the sale ring, at feedlots, and throughout the beef chain. The Simmental RFID tags are manufactured by Allflex and carry the Simmental "S" icon and half a Canadian flag in the centre along with the blue coloring.

Only CSA members in good standing or producers who purchased and transferred a Simmental bull to their name in the past two years are eligible to purchase the distinctive ear tags. They can be purchased online at the Canadian Cattle Identification Agency (CCIA) website, or by phoning 1-877-909-2333, after the purchase has been approved by the CSA office For details contact Rae-Lee Erickson at rerickson@simmental.com.

■ Each year, Manitoba Youth Beef Roundup selects the members who will represent their team at Agribition during their annual junior weekend for all junior cattle enthusiasts under the age of 25 years of age. The 10th annual Manitoba Youth Beef Roundup will be held August 4, 5 and 6, 2017, in Neepawa, Man.

The show is organized by representatives from various breeds that have been involved with national and provincial shows in the past. The goal is to prepare young entrepreneurs for a future in the livestock industry by taking part in this showcase of youth, cattle and friendly competition in events to match all interests and skill levels. Events include team grooming, individual and team judging, showmanship, marketing, sales talk, impromptu speeches, art, photography, scrapbooking, plus Ag Challenge competitions, a cook-off, cattle shows, scholarships as well as the cattle classes. At this 10th anniversary Roundup they will be adding a low-stress cattle handling workshop, cattle presentation workshops, an advocacy workshop, and invitations will be extended to 4-H Champion Females from each 2017 club achievement competition.

Last year's provincial representatives were Samantha Rimke of Oak Lake and Adam Harms of Cartwright. Rimke earned the fourth overall top judging award at the Canadian National 4-H and Youth Judging competition at Agribition in November and was awarded a cash prize along with a belt buckle. The Canadian National 4-H and Youth Judging Competition helps develop the skills of our young agriculture judges for various species of livestock and forages. Check out the Facebook page for Manitoba Youth Beef Roundup or contact Lois McRae 204-728-3058 for more details.

■ The Canadian Hereford Association launched its approved CCIA Alflex RFID tag in December 2016. The CCIA-approved Hereford RFID tags are available for any active member registering cattle, and commercial cattlemen that have had a bull transferred into their name in the last six years. So far, sales are closing in on 2,000 units.

■ Miller Wilson Angus ended up the big winners at the Canadian Bull Congress in Camrose, Alta., last month taking home the $10,000 prize as the triple crown win-

Sales results

M.C. Quantock Canada's Bulls Sale

January 28, Lloydminister, Alta.

Red Angus summer 2-yr. olds, av. $6,458
Red Angus x Fleckvieh Simmental summer 2-yr. olds, av. $6,528
Red Angus x Gelbvieh summer 2-yr. olds, av. $5,158
Horned Hereford x Fleckvieh Simmental summer 2-yr. olds, av. $4,442
Horned Hereford x Fleckvieh Simmental yearlings, av. $5,200
Dehorned Hereford summer 2-yr. olds, av. $4,442
Black Angus x Fleckvieh Simmental 2-yr. olds, av. $6,193
Black Angus x Fleckvieh Simmental yearlings, av. $3,896
Black Angus summer 2-yr. olds, av. $5,081
Charolais summer 2-yr. olds, av. $6,905
434 Bulls, av. $5,832

Lazy S Ranch 48th Annual Bull Power Sale

Saturday, January 28, 2017, at the ranch, Mayerthorpe, Alta.

Red Simmental, av. $6,108
Black Simmental, av. $5,841
Red Beefmaker — (SimAngus), av. $6,108
Black Beefmaker — (SimAngus), av. $4,929
Black Angus, av. $5,103
Red Angus, av. $5,844
233 lots, av. $5,703

Hill 70 Quantock Ranch Barn Burnin' Bull Sale

February 4, Lloydminster, Alta./Sask.

54 Hereford bulls, av. $5,593
30 Charolais 2-yr. olds, av. $7,564
32 Charolais yearlings, av. $5,914
57 Black Angus 2-yr. olds, av. $5,934
33 Black Angus yearlings, av. $5,220
21 Simmental 2-yr. olds, av. $5,120
19 Black Angus/Simmental, av. $5,303
17 Red Angus/Simmental, av. $6,103
60 Red Angus 2-yr. olds, av. $6,588
25 Red Angus yearlings, av. $4,340
18 Red Angus/Gelbvieh, av. $4,570
366 Bulls, av. $5,811
60 Bred heifers, av. $2,155
52 Open heifers, av. $1,389

ner with the Grand Champion Bull, Grand Champion Female and Pen of Bulls.


Piper Whelan

■ Piper Whelan is the new registry/member services assistant at the Canadian Charolais Association. She grew up on a purebred Maine-Anjou ranch at Irricana, Alta., and was active in junior shows and 4-H. Whelan studied at the University of Alberta and the University of King's College school of journalism. She has worked in the journalism and publishing industries for the last few years, and her written work has appeared in several beef-related magazines.

■ 4-H Canada and Syngenta Canada announced the national winners of the Proud to Bee a 4-H'er video contest last month. The first and second runner-up entries each received an Apple iPad mini 2 and the remaining top 10 entries received a selfie stick plus 4-H Canada branded items. The winners are:
1st place — The Pas Helping Hands, 4-H Manitoba; 2nd place — Aidan Tully, 4-H Manitoba; 3rd place — Colton Skori, 4-H Alberta; 4th place — Comox Valley 4-H Calf Club, 4-H British Columbia; 5th place — Boots N Bridles 4-H Club, 4-H British Columbia; 6th place — Irishtown 4-H Club, 4-H New Brunswick; 7th place — Caroline Carpenter, 4-H New Brunswick; 8th place — 4-W 4-H Club, 4-H Alberta; 9th place — Hillmond 4-H Beef Club, 4-H Saskatchewan; 10th place — Jocelyn Kerr, 4-H British Columbia.

■ There was some great news for Hereford breeders coming out of Fort Worth, Texas where a Canadian cow, RVP 51X ABLAZE 7A owned by Harvie Ranching of Olds, Alta., and RSK Farms of Brandon, Man., was named the 2016 Hereford Miss World Champion over females from Europe, Asia, Australia and South America. The website HerefordBreeder.Net, which nominates Champion animals from across the globe to compete in a Hereford Miss World competition at Fort Worth every year, selected RVP 51X ABLAZE 7A as its North American Champion prior to the world competition. There were 70 countries competing for the championship. She is pictured here winning National Champion Female at Canadian Western Agribition with her heifer calf at her side, Harvie RSK Ms Autumn 32D. The pair won Agribition, FarmFair, Bonanza and the Hereford Breeder World Championship. She was undefeated and it's safe to say her show career has ended as she becomes a donor cow. This Miss World competition has been going on for five years, and four of the five winners have been Canadian-bred and -owned Hereford females.

■ It's hard to believe that it's been 50 years since the first Simmental bull, Parisien, was imported to Canada, but its true and Simmental breeders from across Canada are preparing to celebrate the breed's 50th anniversary at events in nearly every province this year. Be sure to mark your calendar and plan to join the excitement at numerous events across the country. For more details as they become available contact your provincial Simmental association or Rae-Lee Erickson at the CSA office 403-250-7979 or rerickson@simmental.com.

■ The World Angus Forum is set for June 21 to 26 in Edinburgh, Scotland with farm tours scheduled for Ireland, Scotland and England. For details see worldangusforum2017.com.

Continued on page 62

Continued from page 61

■ Cattlemen's Young Leaders:

Wilco van Meijl

Wilco van Meijl
Mentor: Jeff Smith, Gateway Livestock Exchange and Lyndsay Smith, Prime Analytics

Wilco van Meijl grew up on a commercial cow-calf family farm in Rapid City, Man., and has always had an interest in cattle, through his involvement in 4-H and breed associations. He has a B.Sc. in agriculture with an animal science major from the University of Manitoba and worked for Cargill for 9-1/2 years on the crop side before joining Farm Credit Canada as a district director.

Van Meijl and his wife, Adrienne, have three children and recently started a partnership with van Meijl's brother and his wife, to begin the transition of the family farming operation that will calve between 380-400 cows this spring. He is looking to better understand advanced marketing options for cow-calf producers in order to effectively hedge their calves and manage risk.

Nicole Viste

Nicole Viste
Mentor: Tim Hardman, beef director of World Wildife Fund U.S.

Raised on the family ranch, Viste is the fourth and fifth generation on each side of her family to be involved in agriculture in the Hanna area of Alberta. Throughout her school years, she was involved with all aspects of her parent's commercial cow-calf and backgrounding operation, and never turned down an opportunity to work cattle with others. She attended Olds College, obtaining her diploma in agriculture production, focusing on beef. After college she worked in the Special Areas with the Agricultural Service Board, becoming a rangeland agrologist. She continues to be actively involved with the family ranch, and has her own small, but expanding, commercial cow herd. She also operates Greystone Images, a western art/photography and home decor business.

Kristy Layne-Carr

Kristy Layne-Carr
Mentor: Carol Kitchen, president and CEO of UFA

Layne-Carr grew up on a mixed grain and cow-calf operation in central Manitoba. She was involved in 4-H beef projects for many years and obtained a bachelor's of science degree at the University of Manitoba where she became involved in the Faculty of Agriculture Students' Organization and sat on the executive for the Stockman's Club. She went on to pursue a master's degree at North Dakota State University in animal and range sciences, focusing on dormant season grazing. In 2006, she and her husband began farming with a 30-cow herd raised from her 4-H projects, and worked full-time off-farm. Since then, the cow herd has expanded to 200 head of Angus-based cows, and the family has grown to six members. Layne-Carr sits on the advisory committee for Manitoba Beef and Forage Initiatives and is hoping to gain insight and understanding of leadership roles in the industry, while specifically focusing on advancing women in agriculture.

By Debbie McMillin

TheMarkets

FED CATTLE

Fed cattle sales dropped back $4/cwt in the past couple of weeks. It's not uncommon for beef demand to slow in February and that, coupled with an increased number of Eastern fed cattle moving west for slaughter and a larger number of cows in the mix, covered off the tighter supplies of local fed cattle. Since the start of the year fed steers traded between $156 and $160/cwt, averaging $156.67 the week ending February 10, compared to $173.56 last year. The Alberta/Nebraska cash-to-cash basis is strong and by the second week of February was at -1.02/cwt compared to -8.82/cwt last year. As a result exports are off by 16 per cent so far in 2017, and while U.S. sales usually pick up as market-ready numbers start to increase, the strong basis is expected to limit interest from southern buyers this year.

The January 1 Canadian cattle-on-feed inventory of 858,129 is down eight per cent from last year, and the smallest since reporting began in 2000. December placements were up six per cent at 93,999, in response to the better prices at that time. The tighter supplies were evident in a 10 per cent drop in steer slaughter to 108, 876 in the first seven weeks of the year, and a one per cent dip in heifers at 69,997 head.

FEEDER CATTLE

The 550-lb. steer average slipped to $202.13/cwt from $206.81 at the end of January, which is still $3 above the first week of this year, but $69.51 below 2016. Heavier calves also slipped under seasonal pressures and a lack of support from the technical market with 850-lb. feeder steers averaging $162.41 by the second week of February, down from $174/cwt at the start of 2017, and $43 from last year. Auction market volumes are quite manageable and export interest light as Alberta feeders continue to trade at a premium to the U.S. markets. The 850-lb. feeder basis has been positive for the past two weeks but ranged in 2017 from -3.32/cwt to +4.40 compared to a more typical negative basis for most of last year, when we saw it as high as +1.76/cwt but also at -17.40/cwt the same week as the current market. Feeder exports through January totaled 3,525 head, down nine per cent from last year.

NON-FED CATTLE

D1,2 cows also lost a few dollars the past couple of weeks, down from a January high of $98.50/cwt to $93.25 the second week of February. The seasonal trend is that the non-fed cow market strengthens through the first quarter; however, a slightly lower fed cattle market and slower February demand have pressured the current price. Of course, Canadian prices have remained relatively strong compared to U.S. markets, which has limited exports and increased the rate of domestic slaughter. Canadian cow slaughter is up 12 per cent from a year ago. Exports, on the other hand, were down 34 per cent from last year in January at 12,014 head. Butcher bull volumes are generally light this time of year but the slaughter numbers to date at 1,314 head are 21 per cent larger than a year ago. Here again, exports are down even more, by 32 per cent, with only 3,428 head crossing the border. The second week of February saw light trade of slaughter bulls trade at an average price of $102.44/cwt.

Debbie McMillin is a market analyst who ranches at Hanna, Alta.

More markets ▶

DEB'S OUTLOOK

FED CATTLE

During a time of seasonal strength, North American beef markets continue to deal with large per capita supplies of red meats and poultry; however, the underlying strength should win out in the coming months. This same seasonal strength should pick up Canadian markets near the end of the first quarter, despite the unusually strong basis weighing on the market this spring. Buyer interest will perk up in anticipation of BBQ season adding some steam to wholesale prices. Tight front-end supplies will support this push by keeping Canadian feedlots current.

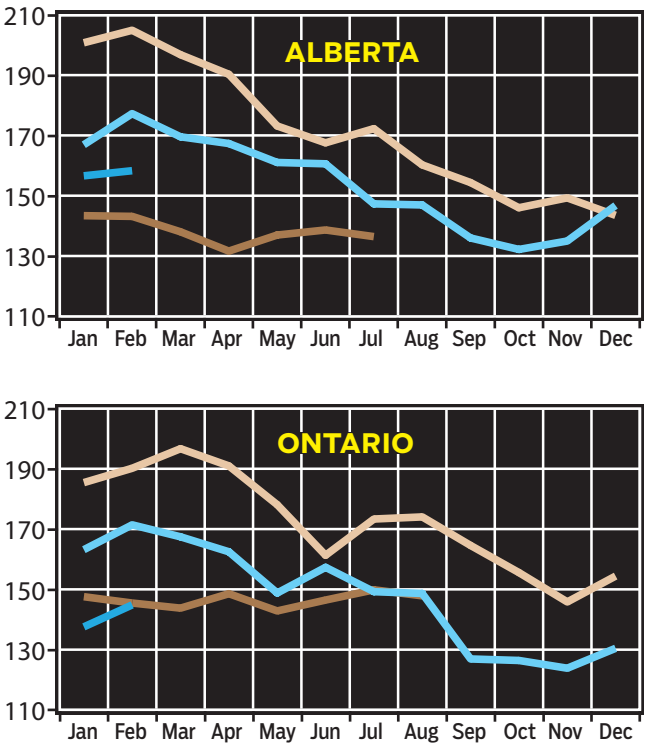
FEEDER CATTLE

With limited risk management options available, heavy feeder calves will continue to struggle in the near term, while lightweight calves should start to enjoy seasonal strength. Rain and recent snowfalls in many areas will spur buyer interest for grass cattle, and spring moisture forecasts suggest more grassers will be put out this year, making for some competitive bidding. Limiting factors to keep an eye on are the strong basis levels and the overall margins in the fed market, which chalked up some large losses in the second half of 2016.

NON-FED CATTLE

Slaughter cow numbers will tighten in the coming months as many cows are heavy in calf and producers are either in the midst of, or gearing up to start calving. On the retail side, the second quarter is a time when BBQ season beckons and the demand for hamburger picks up. Seasonal trends say D1,2 cow prices will pick up steam heading into the second quarter and peak as cows with calves at side head out to pasture, limiting supplies for wholesale buyers. The upside on this market may be capped by the already strong Canadian cow price compared to the U.S., which limits exports.

Break-even Prices on A-Grade Steers



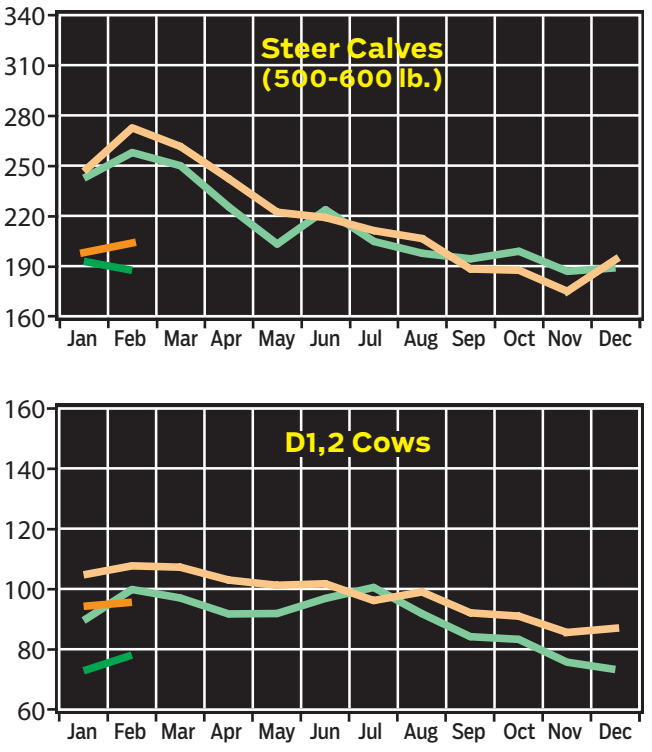
Canfax weighted average price on A-Grade steers

2017
2016

Break-even price for steers on date sold

2017
2016

Market Prices



Ontario

2017
2016

Alberta

2017
2016

Ontario prices based on a 50/50 east/west mix

February 2017 prices*

Alberta

Yearling steers (850 lb.)	$168.56/cwt
Barley	3.69/bu.
Barley silage	46.13/ton
Cost of gain (feed)	56.94/cwt
Cost of gain (all costs)	86.76/cwt
Fed steers	158.29/cwt
Break-even (July 2017)	136.43/cwt

Ontario

Yearling steers (850 lb.)	$175.53/cwt
Corn silage	38.80/ton
Grain corn	4.60/bu.
Cost of gain (feed)	72.72/cwt
Cost of gain (all costs)	106.33/cwt
Fed steers	144.85/cwt
Break-even (August 2017)	147.85/cwt

*Mid-month to mid-month prices
Breakevens
East: end wt 1,450, 183 days
West end wt 1,325 lb., 125 days

Market Summary (to February 4, 2017)

	2017	2016
Total Canadian federally inspected slaughter	232,459	239,599
Average steer carcass weight	918 lb.	938 lb.
Total U.S. slaughter	3,471,000	3,401,000

TRADE SUMMARY

EXPORTS	2016-17	2015-16
Fed cattle to U.S. (to January 28)	18,491	21,906
Feeder cattle and calves to U.S. (to January 28)	3,525	3,894
Dressed beef to U.S. (to December)	594.89 mil.lbs	507.62 mil.lbs
Total dressed beef (to December)	792.78 mil.lbs	709.05 mil.lbs

IMPORTS	2016	2015
Slaughter cattle from U.S. (to December)	0	0
*Dressed beef from U.S. (to December)	250.15 mil.lbs	263.55 mil.lbs
*Dressed beef from Australia (to December)	61.47 mil.lbs	90.92 mil.lbs
*Dressed beef from New Zealand (to December)	45.67 mil.lbs	56.67 mil.lbs
*Dressed beef from Uruguay (to December)	34.93 mil.lbs	29.82 mil.lbs

Canadian Grades (to February 11, 2017)

% of A grades	Yield +59%	54-58%	−53%	Total
AAA	0.1	0.5	1.6	2.2
AA	15.7	23.4	24.0	63.1
A	17.9	9.7	4.4	32.0
Prime	1.2	0.2	0.1	1.5
Total	34.9	33.8	30.1	

Total A grade 98.8%

	Total graded	Total ungraded	% carcass basis
EAST	68,163	4,124	81.3%
WEST	207,536	3,242	83.4%

Only federally inspected plants

By Jerry Klassen

READING FEEDER CATTLE FUTURES MARKETS

The feeder cattle market has experienced unprecedented volatility over the past couple of years. Steers averaging 600 pounds traded for over $300/cwt in September of 2015 but in February this year sold for $198. The erratic price action has caused cattle producers to take more interest in hedging feeder cattle and the Western Livestock Price Insurance Program. Therefore, I thought this would be a good time to discuss the feeder cattle futures market for North American feeder cattle. Whether you are using futures and options brokers or the Western Livestock Price Insurance program, understanding the market dynamics of the cash and futures markets is prudent when planning your risk management strategy.

The feeder cattle futures market (which trades on the CME Globex electronic platform) is the price discovery mechanism for North American feeder cattle. The contract is 50,000 pounds and is based on the CME feeder cattle index. Without going into detail, this feeder cattle price index is based upon a large sample of transactions in the 12 major feeder cattle-producing states for 700- to 899-pound medium and larger-frame feeder steers.

One of the most important factors for western Canadian cow-calf producers to understand is the basis. This is the difference between the CME feeder cattle futures price and the local price at the auction market. The local market price is referred to as the "cash price."

Recently, the USDA cattle inventory report put the 2016 U.S. calf crop at 35.1 million head, which was a year-over-year increase of one million head. This is a supply factor that will influence the overall North American "cash" price of feeder cattle.

An example of basis risk, however, would be if there was a drought in central Alberta and cow-calf producers sold a larger number of feeder cattle earlier than usual during the fall.

Once a producer understands the difference between the cash and futures markets, there are three main characteristics of market behavior that are crucial to managing a successful risk management strategy.

FUTURES COMPARED

During the fall of 2015, I had producers call me stating it was going to cost $80 per head to lock in a $200 loss using the price insurance program and they wanted to know why. Usually when the market is anticipating a surge in supplies, the feeder cattle futures market will lead the cash price lower. Often, the futures market can turn lower one to three months before the cash starts to follow. Remember, it is a futures market so the market is discovering prices in the future. If a producer is trying to buy price insurance or hedge production three to five months forward, the futures market will be trading lower in anticipation of the larger supplies coming into the market.

Second, feedlots will continue to aggressively bid up the price of feeder cattle even if they can't lock in a positive margin by hedging or locking a price on the fed cattle. This makes it almost impossible for a cow-calf producer or backgrounding operator to use the feeder cattle futures to hedge profitably or set a floor price at reasonable levels. Usually, feedlots have to have negative margins for an extended period of time before they lower their bids on the replacement cattle thereby allowing the backgrounding operator to buy feeder cattle at a reasonable price.

This leads me to the third characteristic, which is called the constellation of prices. Feeder cattle futures will often behave like the nearby live cattle futures; however, in theory, the feeder cattle futures are the live cattle five months forward. For example, the April 2017 live cattle futures rallied by $20 since the lows in October 2016. At the same time, the May 2017 feeder cattle futures have strengthened by a similar amount. I've attached a chart including both the feeder and live cattle futures. If a producer bought feeder cattle during the price lows last October, it would be difficult to hedge or use the price insurance program at reasonable levels. However by waiting for the April live contract to rally, in essence, will also pull up the feeder market. Cow-calf producers and backgrounding operators need to have an idea of the market direction for fed cattle so that they can plan their hedging or insurance purchase.

In conclusion, understanding behaviour of the cash and futures markets is necessary for a successful risk management program. Whether producers use futures and options or the livestock insurance program, it's important that they understand these characteristics and use this knowledge in their own market analysis.

Jerry Klassen manages the Canadian office of Swiss-based grain trader GAP SA Grains and Produits Ltd., and is president and founder of Resilient Capital specializing in proprietary commodity futures trading and market analysis. He owns farmland in Manitoba and Saskatchewan but grew up on a mixed farm feedlot operation in southern Alberta. He can be reached at 204-504-8339.

Sales&Events

EVENTS

MARCH

17-18 Maritime Beef Conference, Best Western Glengarry Hotel, Truro, N.S.
18 Nova Scotia Cattle Producer's Association annual meeting, Best Western Glengarry Hotel, Truro, N.S.
21-22 Livestock Care Conference, Best Western Plus Denham Inn, Leduc, Alta.
31 Cultivating the Great Claybelt symposium, Kapuskasing, Ont.

MAY

11-14 LMAC 38th Annual Meeting and Convention, at Perlich Bros. Auction Mart, Lethbridge, Alta.
25-27 British Columbia Cattlemen's Association annual meeting, Coast Kamloops Hotel and Convention Centre, Kamloops, B.C.

SALES

MARCH

7 Belvin Angus 5th Annual Bull Sale, at the farm, Innisfail, Alta.
10 Gelbvieh Advantage Bull Sale, Innisfail Auction Mart, Innisfail, Alta.
10 A. Sparrow Farms Annual Bull Sale, at the farm, Vanscoy, Sask.
11 Edie Creek Angus, Ashern, Man.
11 LLB Angus — 31st Annual Bull and Female Sale, at the farm, Erskine, Alta.
13 Remitall Farms Bull and Select Female Sale, at the farm, Olds, Alta.
14 Harvie Ranching Bull Sale, at the ranch, Olds, Alta.
17 Reese Cattle Co. Charolais Bull Sale, Innisfail Auction Market, Innisfail, Alta.
18 Oakview-Perkin-Triple R Simmental Bull Sale, Brandon, Man.
18 Canada's Red, White and Black Bull Sale, at Johnstone Auction Mart, Moose Jaw, Sask.
18 Hwy 16 West 7th Annual Ranch Raised Multibreed Bull Sale, Mayerthorpe Ag Barn, Mayerthorpe, Alta.
18 Pleasant Dawn Charolais Bull Sale, at Heartland Livestock, Virden, Man.
20 SSS Red Angus 44th Annual Bull Sale, at SSS Red Angus North Sale Facility, Calgary, Alta.
20 Maple Lake Stock Farms, Kick Off to Spring Bull Sale, Hartney, Man.
21 WLB Livestock 13th Annual Bull Sale, at the farm, Douglas, Man.
21 Diamond W Charolais and Angus Bull Sale, at Valley Livestock, Minitonas, Man.
21 Gilliland Bros. Charolais Bull Sale, at the farm, Carievale, Sask.
22 3rd Annual Elite Genetics Bull Sale, RSK Farms Sale Barn, Douglas, Man.
22 HTA Charolais and Guests Bull Sale, at Beautiful Plains Ag, Neepawa, Man.
23 Elder Charolais Bull Sale, at the farm, Coronach, Sask.
23 Wheatland Cattle Co. Annual Bull Sale, at the farm, Bienfait, Sask.
24 Top Cut 25th Annual Black Angus Bull Sale at Cowtown Livestock Exchange, Maple Creek, Sask.
25 Northern Alliance Bull Sale, at B.C. Livestock, Vanderhoof, B.C.
25 Shiloh Cattle Company Annual Bull and Replacement Heifer Sale, at the ranch, Craigmyle, Alta.
27 Riverstone Cattle Company Bull Sale, Olds, Alta.
27 Southwest Showcase Annual Bull Sale, Heartland Livestock, Swift Current, Sask.
27 Everblack Angus 16th Annual "Common Sense" Bull Sale, North Central Livestock, Vermillion, Alta.
28 Prairie Distinction Charolais Bull Sale, at Beautiful Plains Ag, Neepawa, Man.
30 Rivercrest Angus Ranch 14th Annual Spady Bull Sale, at ranch, Alliance, Alta.
30 Tannas Ranches 1st Annual Bull Sale, at the ranch, Water Valley, Alta.

APRIL

1 Towaw Cattle Co, 38th Annual Bull Sale, Sangudo, Alta.
1 53rd Annual Manitoba Bull Test Station Bull and Female Sale, Douglas, Man.
1 Lauron Red Angus 26th Annual Bull and Select Female Sale, at the farm, Didsbury, Alta.
1 Alberta Shorthorn Association's "Cowman's Advantage Shorthorn Bull Sale," Innisfail Auction Market, Innisfail, Alta.
1 Tri-N Charolais and Guests Bull Sale, at Heartland Livestock, Virden, Man.
1 Crescent Creek Angus 19th Annual Bull and Female Sale, on the farm, Goodeve, Sask.
2 Summit 3 Speckle Park Sale, Codiak Acres, Ardrossan, Alta.
3 North of the 49th Bull Sale, at Wilgenbusch Charolais, Halbrite, Sask.
4 JAS Red Angus "Buy the Beef Bull Sale," Neepawa Ag Complex, Neepawa, Man.
4 Cedarlea Charolais and Windy Willows Angus Bull Sale, at Windy Willows farm, Hodgeville, Sask.
4 Top Cut Speckle Park Bull Sale, at Dryland Cattle Trading Corp., Veteran, Alta.
5 Peak Dot Ranch Ltd. Spring Bull Sale, at the ranch, Wood Mountain, Sask.
6 Hunter Charolais Bull Sale, at the farm, Roblin, Man.
7 Wilson Lees Value Added Bull Sale, at Right Cross ranch, Kisbey, Sask.
8 Six Mile Ranch 42nd Annual Bull Sale, Fir Mountain, Sask.
10 Justamere Farms 22nd Annual Bull Sale, at the farm, Lloydminster, Sask.
10 Moose Creek Red Angus, Yearling Sale, Kisbey, Sask.
11 Rodgers Red Angus 44th Annual Performance Bull Sale, Perlich Bros Auction Market, Lethbridge, Alta.
12 Anderson Cattle Company Inc., at the farm, Swan River, Man.
12 Flying K Ranch Annual Bull Sale, at the ranch, Swift Current, Sask.
13 South View Ranch 17th Annual Bull Sale, Ceylon, Sask.
14 Delorme Ranch Your Choice Bull & Heifer Sale, Cowtown Livestock, Maple Creek, Sask.
15 Cornerstone Charolais & Red Angus Bull Sale, at Whitewood Auction Mart, Whitewood, Sask.
15 Short Grass 39th Annual Bull and Female Sale, at the ranch, Aneroid, Sask.

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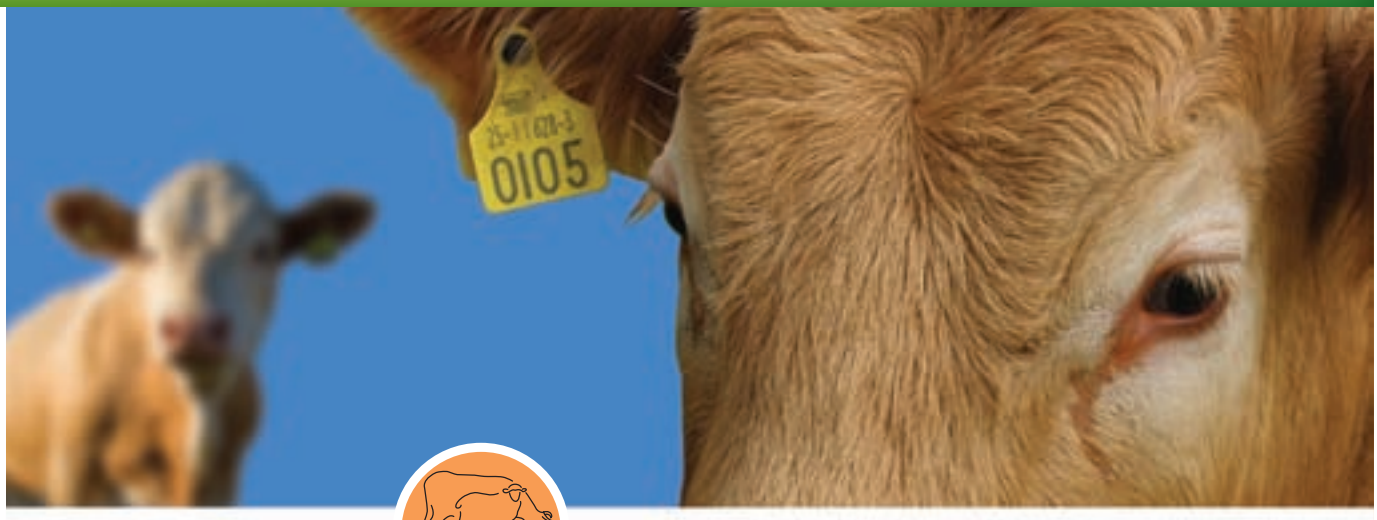

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