

The Saskatchewan Livestock & Forage Gazette

SPRING 2011

Published by the Livestock & Forage Gazette Committee
Vol. 10 No. 1

From the Editor...

It is nice to see the livestock industry on the upswing again. Cow numbers are down a bit in Saskatchewan but not as much as other provinces. Saskatchewan now has 31% of the nation's cow herd. Many forecasters are predicting good returns for producers in the next few years! The articles in this issue will help you make decisions about how to maximize your profit in the grazing industry.

On another note, there is a possibility that the *Livestock & Forage Gazette* Committee may not be able to secure funding to mail print copies in the near future – we may be in a similar situation as many other publications. In order to continue sending you the *Gazette* we may need to send electronic copies. If you have an email address please send it to the Saskatchewan Forage Council at office@saskforage.ca so that we can continue to send you the *Livestock & Forage Gazette*. Have a great summer!

Best regards,

Chris Nykoluk

Livestock & Forage Gazette Editor



Turn to page 2 to read how Orin Balas manages his rangeland.
Photo credit:
Jessica Williams, SMA



Turn to page 8 to find out how much litter your tame pasture needs to be healthy.
Photo credit:
Gerry Ehlert, ASRD

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Publication can be downloaded from:

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Producer Profile: Orin Balas, Ponteix, SK

Submitted by Trevor Lennox, PAg, Saskatchewan Ministry of Agriculture

Extensive Grazing on Native Rangeland

Orin, please briefly describe your operation. What do you feel are some of the greatest opportunities and greatest challenges on your operation?

The ranch is 80% native grass and the rest is farmland that was seeded back to tame forage. Most of the tame fields are seeded to crested wheatgrass. The ranch is in two separate blocks, with a distance of ten miles between them. The larger of the two blocks is the summer pasture, consisting of 35 quarters in a block. The cattle are usually trailed home in early-mid December to the smaller parcel for wintering and calving. The winters are too harsh to leave the cows on the native pasture through the winter. The calving season typically runs from late April through May. The cattle will again be trailed back to summer pasture in late May or early June to spend the summer on the native range.

Recent projects include rejuvenation of some of the old crested wheatgrass fields. These stands are about 50 years old and all the alfalfa has disappeared out of the stand. In 2010 oats were seeded on some of the fresh

breaking and were used for swath grazing. The cattle did very well on the oat swaths.

One of the greatest opportunities on the ranch is having all the summer pasture in one large block. The only major road that runs through the property is a highway, which splits the summer range into two parts. Approximately 80% of the summer pasture is managed as one large field, with only 20% of the land being cross-fenced. While many other producers have experienced better utilization of their pastureland with cross-fencing, I haven't experienced this on my summer pasture. On the type of land that I run cows on in the summer, cross-fencing just doesn't work due to the rugged topography, fragile soils, and lack of reliable water sources. Instead, I let the cattle pick and choose where they will graze.

Another opportunity on the ranch is a very dependable spring on the summer pasture. There is a natural spring in the centre of the 35 quarters that flows year-round. In dry years, it is a huge advantage to have a dependable water source.



Orin Balas describes his range management program for the Society for Range Management 2010 Summer Tour visitors. Photo credit: Jessica Williams, SMA.



Photo of Orin's scenic native rangeland. Photo credit: Jessica Williams, SMA.

One of the greatest challenges experienced lately is the lack of run-off to fill the dams located on the property. These dams were built in the 1950's by my father, and it wasn't until the 1980's that these dams starting going dry. We are no longer getting consistent run-off to recharge these dams. However, the water quality in the dams is very good, with a Total Dissolved Solids (TDS) rating of 100-200 ppm.

As you can see, it is because of water issues that we manage our summer range "extensively", and cross-fencing really isn't an option on this landscape. We cannot dig dugouts to hold water because the soil is too porous and will not hold water for any length of time.

How do you manage your grass?

We have an "extensive grazing system" with low to moderate stocking rates to minimize the chance of overgrazing. To give you an idea of the stocking rate on the ranch, we typically need 35 acres to run a cow for one year. This

is what is required to support a cow for one year on our operation, and this includes winter grazing as well.

What is your winter feeding regime?

Cattle are moved closer to headquarters for the winter and graze stockpiled crested wheatgrass pastures, and native hillsides. Most of the roughage comes through grazing, and supplements are used only when absolutely necessary. In the past, dry distiller's grains and feed pellets have been used as supplements. When snow becomes too deep, or during poor production years, hay bales are relied upon for the winter. This year 170 acres of oats were swathed and used for swath grazing. Hay is usually purchased standing from neighbors. As of February 14th, only two hay bales have been fed this winter.

How do you pick replacement heifers?

All of the heifers are selected out of our own cow herd, and are raised here at home.

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ADOPT Project Review

Demonstration of Annual Forages for Greenfeed or Swathing

Submitted by Al Foster, PAg, Saskatchewan Ministry of Agriculture



Interest from forage and livestock producers in the use of annual warm season crops for livestock feed created a need to develop a project to address producer's questions. The purpose of this project was to demonstrate the differences in growth habit, maturity, and yield of cool and warm season annual forages grown for greenfeed or swath grazing. Eleven crop and crop combinations including five warm season millet varieties were seeded at four sites in 2010. Harvest timing was based on crop maturity. The table opposite provides the dry matter yields from three sites. The Outlook site was irrigated. The Melfort and Prince Albert sites were dryland. Results from the Canora site are not provided as the yields were significantly reduced as a result of late seeding and very wet soils. Based on the average dry matter yields, the forage oat, barley and forage oat/pea and barley/pea treatments tended to be the highest yielding. The millets tended to do better at Prince Albert than at the other two sites.

Average dry matter yield of annual forage crops at three locations in 2010.

Treatment	Yield (Tonnes of Dry Matter / Acre)		
	Outlook (Irrig)	Melfort	Prince Albert
Cowboy Barley	5.36	2.89	2.30
Baler Oat	6.80	2.86	3.55
40:10 Pea	2.48	2.39	2.42
Cowboy Barley/40:10 Pea 70/30	4.90	2.92	2.22
Baler Oat/40:10 Pea 70/30	6.08	3.17	3.21
Golden German Foxtail Millet	4.89	2.08	3.17
Siberian Foxtail Millet	2.38	1.76	3.36
AC Prairie Gold Foxtail Millet	2.51	1.74	3.08
Crown Proso Millet	3.33	1.87	2.92
Red Proso Millet	2.82	1.66	2.50
Elunaria Annual Ryegrass	2.41	1.83*	3.24**

* Two cuts taken

** Includes partial estimate of second cut yield



Some of the warm season annual millet varieties that were grown in 2010 as part of the ADOPT Project demonstration. Photo credit: Al Foster, SMA.

Author's Note: the ADOPT program is an initiative of the jointly funded provincial and federal Growing Forward Program. Its goal is to demonstrate new agriculture practices for producers to consider.

Forage Selection: The Right Questions Lead to the Best Choices

Submitted by Janice Bruynooghe, PAg, Saskatchewan Forage Council



Producers need to consider a number of variables in preparation for establishing a forage stand and to ultimately determine “what is the end goal?” Each forage species has characteristics that make it suitable for some situations and not practical in others. Careful planning and forward-thinking about the realities of the site and management goals are critical when choosing the ‘right’ forage.

First take inventory of the site characteristics. Determine the soil zone, soil texture, and variables such as salinity, pH, flooding susceptibility and erosion tendency as a starting point. With these realities in mind, it will be much easier to narrow down the list of forage species and cultivars which will be best suited to your individual location.

Additional considerations when selecting forages may include winter hardiness, drought and salinity tolerance, competitiveness, and ability to control erosion. With these site-specific and environmental aspects in mind, many of the potential ‘challenges’ with establishment and long-term productivity can be mitigated or even avoided.

Just as important is to consider how the forage stand will be utilized within your management system. What is the planned end use? Are you looking for a forage species or mixture that will be used for grazing, haying or both? What type of animal will be making use of this resource? Are you managing cow/calf pairs, grassing yearlings, or maybe sheep are harvesting the forage? Is the forage palatable and will it meet animal nutritional requirements?

Also consider what time of year you intend to make use of the stand. Are you looking to establish a pasture for early season grazing or maybe the goal is to select species that lend themselves to dormant or stockpiled grazing? What are your expectations for longevity of the stand? It is part of a short-term rotation or are you going to manage it to remain in production for 10-15 years?

Also important to note is that no matter which forage is selected, always consider seed quality when purchasing forage seed. Quality seed is an investment over the lifetime of the stand. Before purchasing seed be sure to obtain a certificate of analysis to evaluate germination, purity and any potential weed seed content.

So how does one then sort through all these variables to make the proper choice? To aid in the selection process, an interactive *Dryland Forage Species Adaptation* tool has been developed. Forty-five species, both tame and native, have been included within a database that includes photos and a detailed description including yields, recommended stocking rates and other management information. Seeding rate and seed

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Trivia Question

What feedlot activity signals the beginning of beef herd expansion in Saskatchewan?

Turn to page 8 to find out.

The Impact of Overgrazing on Native Pastures

Submitted by Glenn Barclay, PAg, Saskatchewan Ministry of Agriculture



Overgrazing native pastures should be avoided. Grass production declines and so ultimately will revenue.

Being able to identify grass species and the percent contribution they are making to a forage stand will assist in the proper management of a pasture. The species of native grasses will change over time with different grazing pressures. Some undesirable grass species increase with increasing grazing pressure. Productive grass species can decline in the stand with overgrazing. Knowing when overgrazing is starting to occur can allow for changes in pasture rotations or other management options. The Saskatchewan Ministry of Agriculture has publications and information on our website to assist producers with grass identification. Regional Forage Specialists can also assist in range assessment and grass identification.

Overgrazing often produces a situation where weeds can invade. Weeds can be of little consequence or can be highly invasive and costly to control. Producers should positively identify any unknown plant species. If a potential weed problem is dealt with early, money, time, and grass production can be saved.

A visible sign of overgrazing on native pastures is the decrease in the level of litter left behind. If there is no, or very little, litter in a native pasture, erosion by wind or rainfall becomes a threat. The valuable few inches of topsoil on hills in native pastures took 8,000 years (ie. when the last ice age ended) to be created. A heavy rain or violent windstorm can remove exposed topsoil in a matter of minutes. Lack of litter means little infiltration of water into the soil. This discourages deeper rooted, productive grasses growing on the hills.

Shorter, less productive grasses and weeds can soon dominate these areas.

Maintaining good quality water resources in a pasture is essential. Overgrazing of land next to a water body is common in pasture situations. Soil erosion from overgrazed adjacent land into pasture water bodies can increase water turbidity and decrease water quality. There have been several studies in Western Canada that show that cattle perform better using clean drinking water. In one study, calves gained 9% more weight when their mothers drank clean water compared to pond water. Steers in the same study showed a 16-19% increase in weight under the same conditions.

Native prairie pastures are often placed into four condition categories; Excellent, Good, Fair and Poor. With every drop in condition the stocking rate drops. As an example, a native, non-wooded Sandy range site in Excellent condition in the dark brown soil zone would have a recommended stocking rate of about 0.40 AUMs (ie. Animal Unit Months) per acre. If more grazing pressure is applied and the range condition drops to Good, the recommended stocking rate would be 0.32 AUMs. The Fair range condition recommendation would be 0.26 AUMs and Poor would be 0.21 AUMs. The stocking rate has dropped by 47% from Excellent to Poor! An Animal Unit (ie. AU) is considered to be a 1,000 pound mature cow either dry or with a calf under 6 months of age. An Animal Unit Month is the amount of dry forage required by one Animal Unit for one month based on a forage allowance of 26 pounds per day.

The main goal of most rangeland managers is to maximize economic returns over a long period of time. This is different than getting

the maximum beef production from a parcel of land. For example, you could start with a pasture in excellent shape, overstock it and get many valuable pounds of marketable beef for a year or two. Later when the same pasture is now overgrazed and unproductive, the same land base produces fewer pounds of marketable beef.

Poor range management produces a dramatic drop in revenue. It creates a situation where it is difficult to predict how many years it will take the pasture to return to a stable productive level. A drought year creates very few options and an overgrazed pasture often contributes to the unwanted sale of cattle or purchase of high cost hay.

Good range management would have created more stable grass production (and thus “drought proofing”) and as a result, more stable beef production opportunities. Erratic



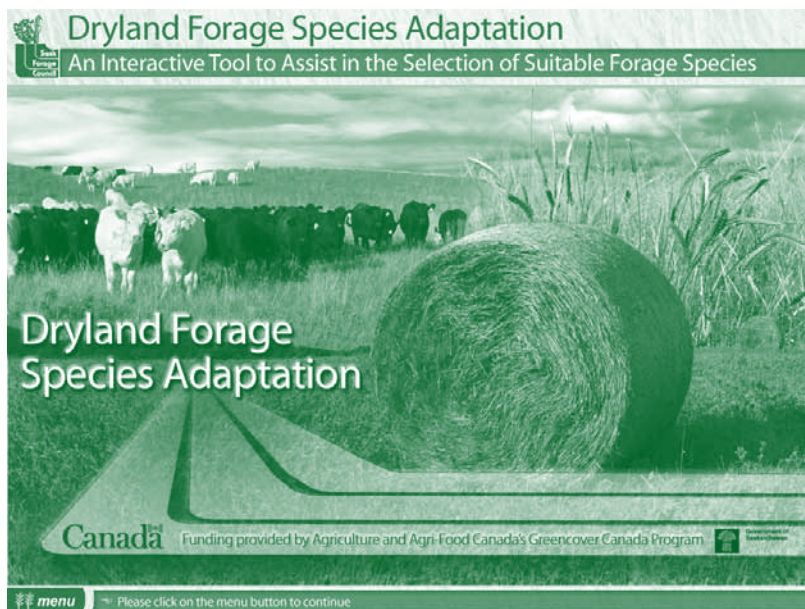
Maintaining litter on pastures is key to maximizing both productivity and profitability. Photo credit: AAFC file photo.

forage production levels coupled with erratic beef markets creates difficult planning strategies. Stable, predictable, productive grass growth on your native range will make planning for your ranch’s future much easier and less stressful!

Forage Selection: The Best Questions Lead to the Best Choices (continued)

cost calculators are integrated as well. An online version of this selection tool is available on the Saskatchewan Forage Council website (go to Resources section - Saskatchewan Forage Council Resources – Forage Species Selection CD) at www.saskforage.ca.

Funding for this development of the Forage Species Adaptation tool was provided by Agriculture and Agri-Food Canada’s Greencover Canada Program. Project partners included Saskatchewan Agriculture and Food, Agriculture and Agri-Food Canada, Ducks Unlimited Canada, Saskatchewan Crop Insurance Corporation and the Saskatchewan Forage Council.



For more information about forage selection or the Forage Species Adaptation tool, contact the Saskatchewan Forage Council at office@saskforage.ca or 306.966.2148.

Managing Litter to Maximize Health of Tame Pastures

Submitted by Chris Nykoluk, Agri-Environment Services Branch



In 2008, AAFC's Agri-Environment Services Branch (AESB) conducted health assessments on over 600 privately owned tame pastures in Saskatchewan that had been seeded in the early 1990s under the PFRA Permanent Cover Program. As part of the project, AESB also contracted Dr. Jeff Thorpe from the Saskatchewan Research Council to analyze litter thresholds from this tame pasture health data.

Why is litter important on tame pastures?

Litter reduces water evapotranspiration from the soil surface, insulates the soil against extreme temperatures (i.e. both cold and hot), and protects the soil surface against raindrop impacts which initiate soil erosion.

As litter breaks down, its components become part of

the nutrient cycling process. These nutrients then feed the system to produce more forage.

In the prairie ecozone (i.e. the Brown, Dark Brown and the southern edge of the Black Soil Zone), litter amounts on native range are closely related to forage production. Basically, the more litter you have, the more forage is produced. This is especially so after a drought.

Research shows that native pastures with adequate litter are able to make a quicker recovery from drought than pastures with

Table of Tame Pasture Types, Soil Zones and Minimum Litter Thresholds

General forage composition type/species	Gray/Dark Gray Soil Zone (lbs/ac)	Black Soil Zone (lbs/ac)	Dark Brown Soil Zone (lbs/ac)	Brown Soil Zone (lbs/ac)
Introduced, legume	350	550	450	350
Introduced, non-legume	400	400	400	300
Mixed native-tame pasture	300	400	350	150
Alfalfa-grass	300	550	450	350
Smooth brome	350	400	400	400
Crested wheatgrass		450	350	300
Russian wildrye				150

Trivia Answer

When the number of feedlot heifers starts to decline, as a result of increased heifer retention by producers.

Source: Roy Rutledge, Assiniboia, SK

insufficient litter. It stands to reason that the beneficial characteristics of litter can benefit tame grass stands too!

How much litter should you leave behind after grazing?

As a result of Dr. Thorpe's analysis, the litter levels in the chart above are recommended minimums for pastures that would be expected to score as Healthy Tame Pasture.



450 lbs/acre



250 lbs/acre



125 lbs/acre

(Photos courtesy of Alberta Sustainable Resource Development – Public Lands. Please see page 65 of Alberta Rangeland Health Assessment Handbook for Grassland, Forested and Tame Pastures)

As a rough guide, what does 400 lbs/acre of litter look like?

The photos above are examples of litter gathered from a 0.25 m² quadrat. (Author’s note: a square of this size can be easily made by tying off 2 meters of baler twine, plus a bit for the knot. You can then use pegs to make

a square on the ground with the loop you have made). Once you have some experience estimating litter in this quadrat, it becomes quite easy to visually estimate how much litter you need to leave behind on your tame pasture.

Saskatchewan Pasture School 2011
June 15-16, 2011
Saskatoon, Saskatchewan

TOPICS INCLUDE:

- Grazing Management Principles
- Pasture Assessments
- Business Management Tools
- Forage Rejuvenation
- Electric Fencing Demonstrations
- Pasture Tours & Producer Panel

For more information contact:
Saskatchewan Forage Council
Phone: (306) 966-2148
Email: office@saskforage.ca
or visit www.saskforage.ca

The Saskatchewan Pasture School provides a forum for grazing managers to gain practical knowledge and expand their management skills through seminars, hands-on exercises and pasture tours.

Recognizing One of Our Own

Chris Nykoluk, Range Management Specialist, AESB - and long-serving *Gazette* Committee member and current Editor of this publication - was presented with an Outstanding Achievement Award by the Society for Range Management (SRM) on February 9, 2011 in Billings, Montana. The Society for Range Management is an international organization which promotes the sustainable management of rangelands. Chris is one of only ten Canadians to be presented with this award, and the only PFRA/AESB person to be awarded thus far. She has been a member of SRM since the late 1980’s.

Congratulations Chris! We’re privileged to benefit from your expertise and contributions!

IMPORTANT

Dear readers.....

In order to continue sending you the *Gazette* we may need to send electronic copies. If you have an email address please send it to the Saskatchewan Forage Council at office@saskforage.ca so that we can continue to send you the *Livestock & Forage Gazette*.

Careful Planning Crucial When Seeding Forages

Submitted by Michel Tremblay, PAg, Saskatchewan Ministry of Agriculture



Establishing forage stands requires careful planning to obtain the best results and optimal production. Species selection, seeding method, weed control, soil fertility, and timing of seeding are all important factors to consider when seeding a new field.

Growing conditions and end use of forage produced are the primary considerations when selecting an appropriate forage species. The Saskatchewan Ministry of Agriculture documents (<http://www.agriculture.gov.sk.ca/Default.aspx?DN=18a6f1b9-f8d3-4c9d-bc5c-c56a88baa2fb>, http://www.agriculture.gov.sk.ca/Forages-Relative_Cultivar_Yields_Perennials) discuss perennial forage species adaptation and cultivar performance.

Seeding depth is an important factor to control when seeding. Planting at depths exceeding 2.5 cm (1 inch) significantly reduces the emergence of forage seedlings. Deep seeding especially reduces emergence of species with small seed size and limited seed energy reserves. Ideally, seed should be placed at between 0.8 and 1.25 cm. Forages need a firm, fine seed bed for optimum seed placement, seed-to-soil contact, and subsequent germination. Minimizing soil disturbance prior to seeding reduces loosening of the seed bed and also conserves moisture – a critical consideration when seeding forages.

Weed control prior to planting forages is critical, as forage seedlings do not compete well with weeds. Effective weed control prior to seeding is desirable, since in-crop weed control options are limited and more expensive. Particular attention should be paid to perennial weeds, they can be impossible to control in crop. Seeding should be delayed until the field is clean of weeds. Mowing

weeds when they elongate but prior to seed set is an effective way to reduce competition and reduce weed seed production in establishment year stands.

Fields should have a soil test completed prior to seeding to determine the fertility status of the soil. Grass fields should have phosphorous and some nitrogen applied. Increased nitrogen applications should be delayed until after establishment. Alfalfa requires phosphorous and sulfur for optimal performance. Well inoculated alfalfa will be able to obtain its nitrogen through fixation. Phosphorous can be applied in greater quantities prior to planting, to provide several seasons of supply to the crop.

Use of a “cover crop” when seeding forage is a common practice in Saskatchewan. Generally, “cover crops” compete with forage seedlings for moisture, nutrients and light. The risk of establishment failure due to competition from a cover crop increases with reduced available moisture. Avoid using a cover crop when seeding under dry conditions.

Evaluate new forage stands in the summer or fall of the seeding year, or in the spring following the seeding year. Plant density is the primary measurement to evaluate establishment success. Plant densities should be determined at several points along a line crossing the entire field in order to have an accurate and comprehensive assessment of establishment. Densities of 3-5 plants per square foot or greater are considered the minimal necessary for optimal production. However, creeping rooted species may fill in thin stands over time.

Forage seeding requires thorough planning.

Careful selection of species, weed control, soil fertility, seedbed preparation and seeding will maximize the probability of successful establishment. Monitor establishment success by determining density of seedlings to ensure a successful start to the field.



Depth control is crucial to successful establishment of forage species.
Photo credit: Michel Tremblay, SMA.

Producer Profile: Orin Balas, Ponteix, SK (continued)

What type of equipment do you use?

The type of operation that I run requires minimal equipment. My focus is on the grass and how it responds to my management. I do own some older haying equipment, which allows me to purchase standing hay from surrounding neighbors.

You were recently part of a Range Health Committee who put together a publication on Range Health Assessment methodologies for Saskatchewan's native grassland. Was this a valuable experience, and what did you learn from it?

It was a very valuable experience to be a part of this committee. The printing of the publication was a great initiative that will enable people to “measure the health” of their range. I learned that it is important to not just look at the ‘abundance of grass growth’, but rather to focus on the actual range site first to determine the site potential for an area. This assessment method involves understanding what your soil is capable of supporting, as some soils are very poor and will never support the type of grass that a good piece of ground would. The publication needs to be more widely distributed so producers can access this information for themselves.

How do you control rodent activity on your property?

The Richardson's ground squirrel (commonly known as the gopher) has been a problem for many producers in south west Saskatchewan over the past several years. The interesting thing is that the gophers are only a problem on the hayland which is swathed regularly for hay, whereas the native grassland is largely unaffected by the gophers. The reason the gophers are a pest on the tame pastures is that they like short grass with open spaces so they can see around themselves for protection from predators. Whereas, healthy native grassland has more litter (ground cover), which discourages the gophers from moving into these areas. This is one of the benefits of having a healthy native range, because it is more resilient against pests.

Anything else you would like to add?

As ranchers, we need to have healthy native rangeland recognized within Ecological Goods and Services programs. Maintaining the health of a functioning ecosystem provides a variety of services, such as clean air and water to society at large. Producers need to be rewarded for good land management!

Upcoming Events

Saskatchewan Pasture School
June 15 - 16, 2011
Best Western Harvest Inn
Saskatoon, SK

For more details contact:
Saskatchewan Forage Council
306.966.2148
office@saskforage.ca

Western Beef Development Centre
Field Day
June 21, 2011
Lanigan, SK

For more details contact:
Brenda Freistadt
306.682.3139
bfreistadt@pami.ca

Society for Range Management Tour –
Native Prairie Appreciation Week
“Both Sides Now” – Tour/Workshop of
Southeast Saskatchewan &
Southwest Manitoba Rangelands
June 23, 2011

Maryfield, SK and Cromer, MB areas
For more details contact: Kylie McRae
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Western Beef
Development Centre



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Agriculture Canada

The Committee thanks the contributors and funders that made this issue possible. Please contact committee members if you have ideas for future articles.

Funding for this project provided by Saskatchewan Horned Cattle Purchases Fund.

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Publication Agreement #40029311