

THE SASKATCHEWAN

LIVESTOCK & FORAGE GAZETTE



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For information on applying manure to tame forage stands, see page 7.
(Photo credit: Trevor Lennox)

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A view of the AI and corral facilities at the Twin H Cattle Co. Ltd. near Goodsoil, Saskatchewan .

Greetings!

A big Thank You to all producers who called to say how much they enjoyed our October issue! All future issues of the Livestock and Forage Gazette will be posted on the websites listed on page 8. Do you have access to email? If you do, we were wondering if we could email notify you when new issues are posted and you could then download it from your computer? In this way you would be helping us to curb one of the largest costs of producing the publication - mailing costs! Your participation would allow us to reach more producers, those that do not have access to internet. Our current circulation is over 7,000 livestock and forage producers and we would certainly like to reach more. If you are interested in the email notification option, please email Carrie Kimmel, SSGA at ssga@sasktel.net

-Chris Nykoluk, P Ag, Editor

COMPARING CASTRATION METHODS

By: Dr. Bart Lardner, P Ag., Western Beef Development Centre

Every year questions arise regarding the age that calves should be castrated and whether banding or surgical castration is better. Castration decreases many of the management problems related to the aggressive and sexual behavior that bull calves often exhibit. However, studies have found that bulls typically gain weight 15% faster than steers because of higher testosterone levels (Gordon 1999).

The most commonly used methods of castration are:

- a rubber ring placed above the testes to restrict the flow of blood to the scrotum (ie. elastrator),
- surgical removal of the testicles, or
- crushing the spermatic cord with a Burdizzo.

Other methods include chemical castration and immunization, but these have not been readily adopted by industry and so will not be discussed in this article.

Surgical Castration

- very effective
- physical removal of testes by cutting
- risk of bleeding, requiring ongoing treatment if infection occurs

Elastrator

- easier to perform than surgery
- less stressful on calves
- tends to generate a more localized immune response than surgical castration
- no risk of bleeding

Problems With Late Castration

- reduced success
- increased animal stress (both methods)
- recuperation period may be longer
- markets will discount bull calves (\$3-5/cwt)
- increased animal welfare issues
- reduced marbling and quality grading.

Research Findings

1. In Colorado, LaShell et al. (2000) evaluated two methods of castration (banding and surgical removal) on 80 calves at both weaning and post-weaning. Weights were recorded two and four weeks post-weaning. Weights two weeks post-weaning were higher ($P < 0.05$) for the banded calves. However, there was no difference between the weights of the two treatments after four weeks.

2. Research conducted at Oklahoma State University with steers and bulls purchased through sale barns indicated banding after arrival at the feedlot resulted in lower ADG (Table 1).

Table 1. Effect of castration method on performance of calves purchased from sale barns during a 42-day receiving period.

| <u>Method</u> | <u>Receiving Period ADG (lb/day)</u> |
|-----------------|--------------------------------------|
| Steers | 1.99 |
| Banded | 1.67 |
| Surgical | 1.92 |

No differences were observed in feed efficiency, feed intake or morbidity. In a second study, the same researchers noted higher gains and feed intake in purchased steers compared to surgically castrated bull calves.

3. At the University of Guelph, Bateman and Duffield (1995) compared early castration calves (one week of age) with calves at 86 days of age. Calves castrated in the first week of life gained 0.06 lb less per day up to weaning compared to those castrated at 86 days of age. This difference, may cost 12 lb (0.06 lb x 200 days) in weaning weight compared to those castrated at approximately three months of age. Because of the reduced rate of gain in calves castrated early, the use of growth implants is recommended.

Summary

Treatment costs are much higher for late castrated bulls compared to animals purchased as steers. These costs escalate when cattle require more than one medical treatment. Early castration is the most humane and cost beneficial approach for the cow-calf producer, reducing discounts for staggy steers. Finally, early castration, at 86 days of age, provides for the greatest lifetime gains under most production systems as long as growth promotant implants are properly used.

Note: For complete list of references please turn to page 7.



PASTURE SAGE CONTROL

By: Bob Springer, P Ag, Saskatchewan Watershed Authority

Pasture sage (*Artemisia frigida*) is native to the Prairies and Parklands. It is also a common invader of seeded pastures. Pasture sage is drought tolerant and is not grazed by cattle but sheep will graze it to some extent.

IDENTIFYING THE PROBLEM

A high density of pasture sage is a symptom of improper grazing management practices. Because pasture sage is not palatable to cattle, it has a competitive advantage over palatable plants when grazing intensity is high. However, pasture sage densities less than 11 plants per square meter have low impacts on forage yield. Populations over this threshold will rereduce forage yield and some form of control is warranted.

TILLAGE NOT A GOOD SOLUTION

Pasture sage produces large numbers of tiny seeds, over 4 million per pound, resulting in a large soil seed bank. Using tillage to control pasture sage in seeded grass is a common practice but it usually results in an increase in the number of pasture sage plants. Tillage of native pasture is not an acceptable agricultural practice.

INTEGRATED MANAGEMENT APPROACH

In order to effectively control pasture sage over the long term the root cause, improper grazing management, must be corrected. Herbicides can effectively reduce pasture sage but if grazing management is not changed, the problem will recur in a few years. On seeded pastures a combination of both herbicide application and improved grazing management will usually result in long-term control of pasture sage. On native pastures, rest, reduced stocking rates and changes in grazing management are the best remedies.

The most important factor in recovery of these pastures is providing desirable plants with sufficient **REST** between grazing events.

WHAT TO DO

Seeded pasture - herbicide application (optional)

- **Year 1:** Apply 2,4-D LV ester 600 @ 1.1 litres/acre (24 active ounces) to actively growing pasture sage (usually in June).

Rest or defer grazing until seed production of key grasses is complete and reduce stocking rate by at least 50%. Implement a short duration rotational grazing system to provide longer rest periods between grazing events. On seeded pastures with alfalfa (or another legume in the stand), herbicide application may not be desirable, as it will remove the legume.

- **Year 2+:** As desirable species recover, gradually increase stocking rates to a sustainable level, ensuring that grazing periods are short enough to leave at least 3 inches of stubble for re-growth and root building.

Native pasture – Note: 2,4-D application on native pasture is not recommended as it will kill desirable nitrogen fixing native forbs.

- **Year 1:** Rest pasture to allow desirable plants to regain vigor.

- **Year 2:** Reduce stocking rate by at least 50% and defer grazing until seed production of key grasses is complete. Change grazing management to ensure a minimum of 50% carryover and a full year of rest for the plants following grazing.

- **Year 3+:** Avoid grazing before mid June. As the desirable species recover gradually increase the stocking rate to recommended levels but continue changes in grazing management to ensure a minimum of 50% carryover and a full year of rest for plants following grazing.

IS IT WORKING?

Monitor pasture sage populations during the first few years following treatment and grazing management changes. If the density of pasture sage does not return to acceptable levels and remain there, further changes to grazing management will be necessary.



References: Bowes, G. and Peat, H. 1994. Management of Pasture Sage; Bowes, G., B. Kirychuk, 1994. Management of Pasture Sage: Controlled Grazing or Herbicide?; Bai, Y. and Romo, J.T. 1996. Fringed sagebrush response to sward disturbances: Seedling dynamics and plant growth. J. Range Mgt. vol.49:228-233.



RANGING BEHAVIOUR OF BEEF CATTLE

By: Ross Macdonald, A Ag, Saskatchewan Watershed Authority/Ducks Unlimited Canada

What do fish, badgers, chickens, sheep, elk and cattle have in common? All of these species have documented social orders. Surprised that your cattle may have a more intricate social life than you? Although that may be an unfair comparison, grazing cattle do exhibit many social behaviours. To the inexperienced “cow watcher” the social interactions can go unnoticed but subtle actions may direct animal movements throughout a pasture.

When studying a commercial herd of 155 cows in southwestern Montana for 2 ½ years I saw many things! Cow interactions were recorded during more than 900 hours of observation time. During the study period, some high ranking cattle aggressively displaced lower ranked cattle. However, most of the cow displacement was attributed to avoidance. Low ranked cows avoided areas where higher ranking animals grazed. The cows in the study were found to have a linear, social hierarchy which was stable between years. In effect, the cows established a social structure, or pecking order, where cow A was dominant over cow B and cow B was dominant over cow C..... Previous studies of similar social structures suggest that dominance confers priority access to resources such as feed, shade and water. We observed this when specific resources became scarce, namely water and lush feed during drought. As forage quality declined cattle distributed themselves around areas of better quality forage. High ranking cattle were found in areas with more digestible forage than low ranking cattle.



However, several other factors have also been attributed to distribution differences in grazing animals. Slope, distance to water, temperature, wind speed, wind direction and precipitation have been associated with cattle distribution. With so many contributing factors, grazing distribution patterns are difficult to predict. Yet, social behaviour among grazing animals

should be considered when pondering grazing distribution.

If low ranking cows are avoiding other cows and consuming poorer quality forage, does production suffer? The answer is maybe..... When conditions in the pasture caused nutritious forage to be scarce, low ranking cow production was less than high ranking cow production (fewer pounds of calf). If the social interactions and avoidances play a role in cattle distribution and production, how can management benefit from this knowledge?

The key is recognizing that these animals are responding to pressure. Pressures on a cow could include the presence of a dominant cow, thirst, hunger, pests, presence of a rider or a fence, daily climate change, or any combination of these. Identifying what pressures your cows are under may make management more effective and interesting. Applying pressure to your cattle to effect livestock distribution and performance is one aspect of the “art” of range management. Developing skill in herding animals, fencing, salt placement and forage manipulation take time. However, manipulating cattle distribution and movement through the slightest change in pressure such as positioning yourself, your fences and water sources will foster the “art” of range management on your operation. More time spent on the range may increase your awareness of your grazing system and could provide more pounds of calf at weaning.

Author's Note: This study took place at the Montana State University's Red Bluff Research Ranch near Norris, MT. Dr. Jeff Mosley was the project advisor and continues the research.

Trivia Question in last issue: The drawing below represents our provincial native grass emblem. What is its name? **Answer:** Needle & Thread Grass.



Using Cattle Manure To Rejuvenate Tame Forages

By: Trevor Lennox, P Ag, Saskatchewan Agriculture, Food & Rural Development

Older forage stands can become 'root-bound', meaning that soil nutrients are tied up in root material. A 'root-bound' forage stand requires input of nutrients to return productivity to its optimum level.

Animal manure contains many nutrients required by a 'root-bound' forage stand. In contrast, commercial fertilizer only supplies a few specific nutrients. When using manure as a nutrient source, it is important to understand that only a portion of the nutrients are immediately available. Manure must decompose (mineralize) in order to be converted into a form that plants can uptake, resulting in a slow-release form of plant nutrients.

Nutrient Status

It is important to have manure tested for its nutrient status when determining an appropriate application rate. Table 1 shows average nutrient values for fresh cattle pen manure. Solid cattle manure, which contains both fecal matter and straw bedding, typically has only 10-20% of the total nitrogen (N) in a form that plants can immediately use, whereas manure that has composted for 1 year will have approximately 50% of the N in a plant available form. Typically 50% of the total phosphorus (P) in manure is available the 1st year, and 90-100% of the total potassium (K) is available for plant uptake the 1st year.

Table 1. Nutrient status of fresh cattle manure with straw used for bedding (% on dry weight basis).

| | |
|----------------|---------------|
| Nitrogen (N) | 0.5 – 2.0% |
| Phosphorus (P) | 0.5 – 1.5% * |
| Potassium (K) | 0.8 – 2.5% ** |
| Sulphur (S) | 0.08 – 0.2% |
| Calcium (Ca) | 0.5% |
| Magnesium (Mg) | 0.3 – 0.4% |
| Copper (Cu) | 0.01% |
| Manganese (Mn) | 0.02% |
| Zinc (Zn) | 0.006 - 0.02% |

Note: *multiply P by 2.3 to convert to P₂O₅;
**multiply by 1.2 to convert to K₂O.

(Data adapted from Schoenau, 1998-00 and Iwaasa 2001-02).

If manure is applied repeatedly to a forage crop, soil P and K levels can become exceedingly high, as these two nutrients can accumulate very quickly, in contrast to N which can be used quickly by the growing forage plants. On areas receiving repeatedly high amounts of manure, grass tetany (milk fever) can become a problem in livestock due to the high K levels interfering with the uptake of magnesium from the soil.

A particular problem with applying solid cattle manure to forage stands is that no suitable technology has been developed for placement of the manure below the soil surface. This results in some of the N being lost to the atmosphere through the process of volatilization.

Productivity Increase and Economics

In a 1998 study at the Western Beef Development Centre at Lanigan, SK, solid cattle manure was applied to an old crested wheatgrass stand at 2 rates: 30T/ac and 60 T/ac. Dry matter yields the year after were: 2558 lbs/ac for the control, 3893 lbs/ac for the 30 T/ac rate and 4213 lbs/ac for the 60 T/ac rate. The costs associated with this project were \$20/ac for the 30 T/ac rate, and \$40/acre for the 60 T/ac rate. By spending \$20/ac, pasture production increased by 1335 lbs, which works out to 1.5 cents/lb of production. At 60T/ac, the increase in forage production is valued at 2.4 cents/pound.

In an ongoing study by the Southwest Forage Association (Iwaasa, 2001-02) at Swift Current, the application of fresh feedlot manure to an old meadow brome stand reduced forage yield in the year of application (2001), but significantly increased productivity the year after (2002). The yield reduction in the year of treatment was probably a result of excessive trampling of the forage when applying the manure, as well as the very low precipitation in 2001. The manure increased the crude protein of the forage, resulting in higher utilization of the treated areas. The forage on the treated areas remained green for a longer time period into the fall, likely due to the (cont'd page 7)



RETRO-FITTING OLD WINDMILLS

By: Randy Pollries and Tom Turner, AAFC-PFRA

Windmills have been used to pump prairie ground water for over 100 years. In fact, some of the existing windmills found on PFRA community pastures were originally purchased by local farmers before the conception of PFRA and the community pasture system. Overall, these windmills have proven to be both durable and economical for delivering ground water in remote areas. Although they have been quite "bullet proof", certain servicing problems recur with parts of the unit. This article outlines some of the more common problems along with some ways in which these problems can be solved.

Problems

a) The pump on most windmills has a brass or cast iron cylinder. This cylinder requires a fair amount of servicing: cup leathers and flapper valves need to be replaced and, each fall, the unit must be drained so that it does not freeze. Replacement is expensive if the unit freezes and cracks.

b) Usually, problems occur with the wooden "pitman rod" or stick, which runs from the windmill head down to the cylinder rod. This stick must lift the plunger in the cylinder and force it down on the down stroke. Any obstruction on the down stroke can break the stick; too much resistance at high turning speeds will also break it.

c) One other main criticism of windmills concerns the float. Generally, a wooden float (located in the stockwater trough) acts as a brake on the windmill when the trough is full of water. This float also releases the "brakes" when the water level is low. The criticism is that this float assembly does not release the brake soon enough and stockwater shortages can occur.

Retrofitting

Over the years, many PFRA staff have come up with several modifications that reduce servicing and also improve the overall efficiency of these old windmills. A typical windmill retrofit involves

replacing the pump cylinder, making a new stick, and adding a poly storage tank.

a) The pump cylinder can be replaced with a PVC "working barrel" (see diagram B). This working barrel is actually a 3 inch schedule 40 PVC pipe with a 3 inch double leather brass plunger, and a 7/16 inch galvanized pump rod. At the bottom of the working barrel is a 2 inch brass check valve with a spring loaded rubber seal. This is a big improvement over the leather flapper check valve in the old cylinder pump! The top of the working barrel is made of a 3x3x2 inch "Tee fitting" with a 3 inch cap. The cap is then drilled to accommodate the pump rod. A 2 inch PVC drain pipe runs from the working barrel to the water tank. *Note: on sand point wells, the working barrel is attached to the sand point with aluminum "quick couplers". This makes removal and drainage very easy - no tools are required!*

b) The stick above the working barrel can be replaced with a 5/16 inch cable with a 20 pound weight on the end (Diagram B). This weight keeps any slack out of the cable and this eliminates any jerks to the windmill head at high working speeds.

c) The last part of a retrofit is the addition of a 1200 gallon plastic poly tank (Diagram A). The tank is set above the stock watering troughs so that water can be gravity fed into the troughs. The float on the windmill is then moved to the poly tank. This change allows the windmill to start pumping much sooner. Extra water storage means a more reliable water supply when either the wind stops blowing or a breakdown occurs unexpectedly.

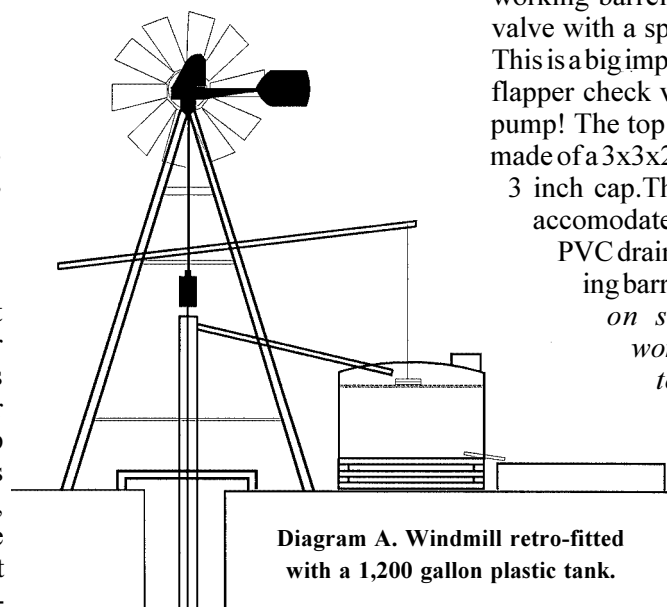


Diagram A. Windmill retro-fitted with a 1,200 gallon plastic tank.

TRIVIA QUESTION

What is the Saskatchewan benchmark herd production cost to produce one pound of calf?
(Answer will be in next issue).

WINDMILLS (Cont'd)

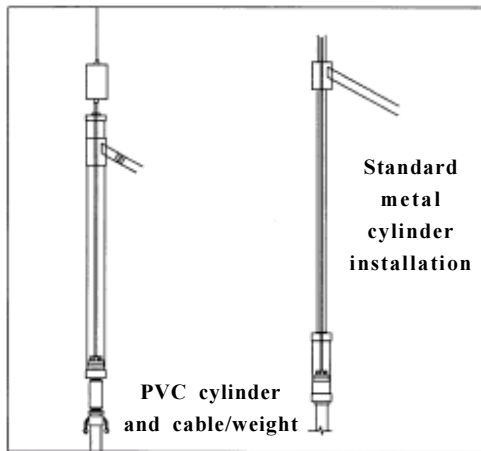


Diagram B. Cylinder replacement.

Results

These windmill modifications work well. Downtime of windmills is reduced and water storage is increased by more than 1000 gallons by adding the poly tanks; the water troughs are still full when the windmill begins to pump. All this for less than \$1000!

For more information you can call either Randy or Tom at (306)882-4272, or your nearest District AAFC-PFRA office.

RESEARCH ROUNDUP

Canada Thistle Management in Pasture. Changing from a continuous grazing program to a high intensity low frequency (HILF) rotational grazing system in a heavily infested pasture reduced thistle abundance from 37 thistles to 2 thistles per square meter in two years. Grazeable forage increased. Sites were defoliated every 4 weeks to 2 cm. For more information contact Dr. Ed Bork, University of Alberta, Edmonton (780)492-3843.

This publication can be downloaded from the following websites:

www.agr.gov.sk.ca.

www.wbdc.sk.ca

www.ducks.ca

www.agr.ca/pfra/land/range.htm

USING MANURE

(Article cont'd from page 5)

reduced evaporation of soil moisture due to manure on the soil surface. Note the amount of trampling of vegetation in the photo below, in the year of application.



Conclusion

Manure can be an economical way to improve productivity of a 'root-bound' forage stand. It is important to test the manure to determine its nutrient status so that a proper application rate can be determined. Manure should not be surface-applied in late fall or during the winter as there can be higher nutrient losses when applied at this time.



Photo: Note lush vegetation where manure applied.
(Photo credits this article: Trevor Lennox; for more information you can call Trevor at (306) 778-8294)

References for Castration Methods Article (from page 2).

1. Berry, B.A., Choat, W.T., Gill, D.R., Krehbiel, C.R., Smith, R.A. and Ball, R.L. 2001. Effect of castration on health and performance of newly received stressed feedlot calves. 2001 Animal Science Research Report. Oklahoma State University. p. 986.
2. Gordon, Kindra, September 1999. Making Steers. BEEF Magazine.
3. LaShell, B.A., Wilson, A., Zalesky, D.D., Selzer, D.R. and Conrad, G. 2000. Comparison of banding and knife cut castration in beef cattle. San Juan Basin Research Centre Report. Fort Collins, Colorado, USA.
4. Linton, A.C., J.S. Brink, H.H. Stonaker, T.M. Sutherland and L.C. Faulkner,. 1968. Factors Affecting Weaning Weights of Cattle. W.S.A.S. 19:319-324.

SCENTLESS CHAMOMILE CONTROL

By: Michael Champion, P. Ag, Ducks Unlimited Canada

Scentless chamomile (*Anthemis cotula*), also known as wild daisy, scentless mayweed, false chamomile, Kandahar daisy or barnyard daisy is a noxious weed occupying many RM's in Saskatchewan. During exceptionally wet years during the last decade it has spread rapidly throughout the Black and Gray Wooded soil zones. This weed could potentially spread throughout the entire agricultural area of the province. Scentless chamomile's ability to exist as both a summer/winter annual or short lived perennial has made it difficult to control in existing forage stands. It also increases the costs of annual cropping.

As with all weeds, proper identification of scentless chamomile will lead to early detection, reduced herbicide costs and more effective weed control. Two good characteristics for identification are flower color and leaf shape. The flowers on scentless chamomile are conspicuous, 2 to 4 cm in diameter and appear from June to October. The flower has white ray petals with a yellow center giving the plant a "wild daisy" appearance. The leaves are finely dissected and smooth, with the plant standing erect from 15 cm to 1 meter tall. The leaves have no odor when crushed.

It is important to know where to look for scentless chamomile. It likes to grow in moist to wet habitats and along the edges of vegetation types (ie. along road right-of-ways). It often grows in a ring around sloughs and wetlands. Seeds can float on water for up to 12 hours and can even germinate on water!

Scentless chamomile spreads through seed production and it is easily transplanted. For best control, remove the plant before it is able to set seed. For winter annuals, a pre-seeding burnoff with glyphosate is recommended, and for summer annuals, a pre-seeding burnoff is recommended with an additional in-crop chemical application.

If chemical treatment is not an option, picking the plant is a suitable alternative. Scentless chamomile has a shallow, dense, and fibrous root system so it is easily pulled. It is important to get both the foliage and the crown. Also, be sure to remove the plant from the field as simply picking it and leaving it on the ground may allow the weed to re-root itself if moisture becomes available. Also,

if the plant has a flower, it may set some viable seed.



The above article was modified from existing material from a Saskatchewan Agriculture, Food & Rural Development fact sheet located at: http://www.agr.gov.sk.ca/docs/crops/integrated_pest_management/weed_control/scidentification.asp

For more information you can contact Michael Champion at (306) 569-0424, or your nearest extension agrologist or weed inspector.

RESEARCH ROUNDUP

Companion Crops May Jeopardize Forage Yields. The Saskatchewan Forage Council, Agriculture and Agri-Food Canada, and Newfield Seeds Ltd. recently completed an Agriculture Development Fund-funded study examining the effect of companion crops on subsequent forage yield. Annual ryegrass, peas and canola were used as companion crops in Swift Current, Saskatoon and Nipawin. Three years of data was collected on forage yield in the year following establishment in plots with companion crops and plots seeded without companion crops. At Nipawin, the companion crops had insignificant negative impact on forage in all three years, however significant yield reductions occurred at Saskatoon and Swift Current in all companion crop treatments in all three years of the study. Annual ryegrass caused the greatest yield reduction in all cases. This study reinforces the recommendation that, particularly under dry conditions, the companion crop yield in the year of establishment may be more than offset by lower forage yields in following years, and that companion crops are particularly detrimental in drier environments. *For more info please call Michel Tremblay, Forage Specialist, SAFRR at (306) 787-7712.*

U OF S STUDENTS DO WELL AT INTERNATIONAL RANGE COMPETITION

By: Tracey Harrison

Three students from the University of Saskatchewan's Stockman's Club have brought recognition to their school in the area of range management. As a team, Julie Korol, Alicia Hargrave and Steve Hankey placed fourth out of 19 universities at an international Society for Range Management competition held in Casper, Wyoming in early February. Team coordinator, Janice Bruynooghe, said the students did well for the short period of time in which they had to prepare.



Range Team members (L to R): Julie Korol, Steve Hankey, and Alicia Hargrave.

In the competition, students answered questions on everything from general range regions of western North America to grazing management, animal nutrition, range ecology, range improvement (the use of fire, herbicide and fertilizer), range inventory and multiple use relations.

The students also received individual scores on the exam. A notable performance came from Julie who placed 4th out of a field of 120 students.

Janice said, "For our students that are going to be graduating this spring and looking for jobs - this was a great opportunity. They learned so much that they're going to be able to put to use. And I think that's one of the benefits of funding - just being able to take a team down there. It just opens their eyes to bigger opportunities."

In addition to financial support from the University's Presidents Fund, the College of Agriculture, the Department of Animal Science and the Department of Plant Science - the team received funding through the Agricultural Environmental Stewardship Initiative (AESI). This AESI funding, administered through the Canadian Adaptation and Rural Development Fund in Saskatchewan (CARDS), was raised through a proposal made by the Prairie Parkland Chapter of the Society for Range Management (SRM). Additional financial support came from the Saskatchewan Watershed Authority and Ducks Unlimited Canada. Many thanks to other numerous helpers who made this opportunity possible.

TIPS TO IMPROVE PRODUCTION OF NATIVE RANGELAND

By: Chris Nykoluk, P Ag, AAFC-PFRA

Maximizing the amount of pasture grazing that you have will go a long way to reducing your winter feeding costs. Cow winter feeding costs are the most expensive component of managing the cow-calf unit. We know that forage production on properly stocked rangelands can be up to twice that of overstocked rangelands. Thus, poorly managed range represents a considerable financial loss. Well-managed native range also recovers much faster after drought. Here are a few tips to help you maximize the production potential of your native rangelands.

1. Stock at recommended levels for your soil zone and soil type; contact your local extension agrologist for assistance if needed.

2. Delay grazing until mid June, when native key grasses are more tolerant of grazing. An easy rule of thumb is to begin grazing after key grasses have a minimum of 3 leaves (this is usually about early to mid June in our province). Another rule of thumb: For every day grazed too early in spring, you will lose 2 days of grazing in fall. Use tame forages such as crested wheatgrass or meadow brome for this early spring grazing window.

3. Increase herd sizes and decrease the time spent grazing in each paddock, where possible. This accomplishes 2 things: it improves live-stock distribution over fields, and it increases the rest time during the grazing season. A two or 3 field rotation is good, but a 4 field rotation is even better for providing valuable plant rest on each field.

4. Maintain adequate levels of litter (ie. old dead grass). This rule is key! Litter really pays its way - reducing both soil temperatures (up to 10 degrees C on a cool summer day) and by making better use of available soil moisture. Some clippings undertaken by Alberta Agriculture & Rural Development in southeast Alberta mixed prairie *before the 2002 June rains* indicated the following:

Site One:

Had: 60 lbs/ac litter

Produced: 80 lbs/ac new grass

Site Two:

Had: 1000 lbs/ac litter

Produced: 700 lbs/ac of new grass



PRODUCER PERSPECTIVE: TWIN H CATTLE CO. LTD.

By: The Himmelsbach Family, Twin H Cattle Co., and Todd Jorgenson, Saskatchewan Agriculture, Food & Rural Development

The Twin H ranch is run by the Himmelsbach family of Goodsoil, just south of Meadow Lake Provincial Park. Brothers Paul and Gerhardt are the senior partners, while the junior partners include Paul's wife Chris, their sons Roy and Trevor, and Trevor's wife Collette. The Himmelsbach's home site is about 5 miles southeast of Goodsoil while their main grazing resource is about 15 miles south in an area known as the Whitehood Forest. Their main grazing resource consists of about 24 sections of SAFRR Lease consisting of native forested rangeland, which includes aspen dominated forest, muskeg / riparian areas, and spruce and jackpine bluffs.



The Himmelsbach's have taken the grazing management of their bush pasture as one of their primary focuses, since these pastures are the main input for converting forage to beef. Timely rest is the main ingredient for healthy forage plants, and in this sense, many of the practices typically employed on native prairie are just as applicable to forest range. "We have cross-fenced a total of 17 paddocks to allow us to provide rest during the growing season", notes Paul. "We essentially run 4 herds through our different pastures: 1. bred heifers; 2. cows with steer calves; 3. cows with heifer calves; and 4. cull cows with calves and cows with twins." Smaller paddocks are located near the AI and corral facilities at the entrance to the pasture. Cow calf pairs are grouped into 100-cow herds at take-in and remain in these herds during a 21-day AI breeding program. They are then grouped and sent out to rotationally graze the remaining paddocks for the rest of the grazing season. The cattle end up back at the ranch headquarters in late September, when the steers are grouped into one of three 150 head groups: heavy, middle or lightweight steers. These groups are then returned with their mothers to graze in the initial AI fields that were reseeded to oats and fall

rye in July. By the first week of October, all the steer calves are ready to ship to Western Feeders at Strathmore where they are custom fed to finish.

Heifer calves are handled similar to the steers with all non-replacements sent to Strathmore shortly after the steers. Replacement heifers are put back with their mothers to graze the July-seeded cereals near the AI corrals. All open cows and cull cows are put on feed and /or sold.

All animals sent to slaughter have an electronic ID so that carcass quality can be traced.

"The whole ranch program from land base to genetics to feeding is aimed at our target packer market. This all hinges on a partnership between our ranch, the feedlot and the packers."

"The bush pasture has been good for our operation. We have expended dollars for cross fencing, which we feel has paid off. The benefits in forage response comes not from how many fields we have and how quickly we move livestock through, but from the level of utilization (which we can control) and the time they are rested (pending growing conditions)."

The northwest has experienced well below average precipitation in recent years. This has resulted in many of the natural water bodies and dugouts drying up, making grazing management for the Himmelsbachs a little more difficult. They were forced to drill 20 new wells; 12 run with solar power, 7 with 220 volt and 1 with a gas generator. The wells are relatively shallow, averaging about 40 feet. This helped a bit with cost, but drilling was still a major expense. "Now that the wells are in place we view them as a capital investment; they are essential in dispersing livestock over the entire paddocks and reducing overgrazing near natural water bodies."

The Himmelsbach's have managed to persevere through some tough years in terms of weather by paying attention to both the business and range management side of their operation. There are some inherent problems when grazing forest range but typically a lack of moisture is not one of them. However, it has become a major issue with all producers in this part of the province and forces some tough decisions. This is just one example where some planning and investment has paid off in terms of drought and forage management. Paying attention to the business /livestock side should not come at the expense of the resource.

GAME SHOW DELIVERS MANAGEMENT MESSAGES TO KIDS...

By: Karyn Scalise, *Prairie Conservation Action Plan (PCAP)*

Agribition 2002 marked the Prairie Conservation Action Plan's (PCAP) fifth consecutive year of delivering the Cows, Fish, Cattle Dogs and Kids Game Show on riparian (streambank) stewardship to grade 4 to 6 students, via the Agri-Ed Showcase. This Game Show has also been delivered at Fall Fair in Saskatoon for the past four years. To date we have reached approximately 7,500 (primarily urban) students through these two venues.

The Game Show teaches students about the importance of riparian areas in maintaining water quality and providing wildlife habitat. It illustrates how ranchers, farmers, urban residents and cottage dwellers all need to work together to maintain these important "green zones".

The Game Show features a huge game board complete with a meandering stream bounded by native pasture, farmland and a city. Students are divided into two teams of cattle dogs (the smartest animals on the ranch!) and their challenge is to move their cows back to the ranch while maintaining a healthy riparian area. Students advance their cows along the riparian area by answering skill-testing questions that are determined by rolling a jumbo foam die. Symbols on the sides of the die correspond to six question categories: cows, fish, water, wildlife, vegetation, and Mother Nature and You. Different students are selected for each round of play and they consult with their team members for the correct true/false or multiple-choice answer. When a question is answered correctly, their cow is "moovooed" along the stream and an icon is left behind to signify that the riparian area has been maintained in a healthy state for wildlife, people and other cows to use. Volunteer "cow puppets" assist the students in consulting with their team.

Teachers like the interactive nature of the Game Show and our presenters best. The Game Show is coordinated by the PCAP and delivery Partners this year are the Saskatchewan Burrowing Owl Interpretive Centre (SBOIC - Brent Mason) and the Saskatchewan Watershed Authority

(SWA - Krista Connick, Stephanie Fradette, and Jason Puckett).

In addition to Agri-Ed, the Game Show is delivered to schools through the "Owls and Cows Tour", which also features SBOIC's "Owls on Tour Program". The "Owls and Cows Tour" was launched in the spring of 2001 to provide information on native prairie and riparian stewardship to grade 3 to 6 students. By March 2003 we will have reached ~9,500 students at 200 schools! Twinning these programs saves on program administration and delivery costs, and allows us to reach more schools than either of us could on our own.

The Game Show and the "Owls On Tour" program are also part of the Eco-Extravaganza (Eco-X), which we are currently delivering to grade K-6 students from 16 schools in the Frenchman River Watershed and the Great Sand Hills. Stay tuned for an update on Eco-X 2003 in the next issue!



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For more information on the PCAP you can call Karyn at (306) 352-0472, or Allen Patkau, SSGA PCAP Chair, at (306) 544-2778. Web address is www.pcap-sk.org.



Upcoming Events

1. Saskatchewan Stockgrowers Annual Convention

Location: Yorkton, SK
Date: June 1-3rd, 20
Contact: Carrie Kimmel
Phone: (306) 757-8523
Email: ssga@sasktel.net

2. Pasture School for Producers

Location: Termuende Research Farm & University of Saskatchewan
Date: June 10-11th, 2003
Contact: Dr. Bart Lardner
Phone: (306) 933-5700
Email: blardner@agr.gov.sk.ca



3. Joint Prairie Conservation Action Plan - Society for Range Management Summer Tour (Native Prairie Appreciation Week)

Location: Big Muddy Badlands
Date: June 17-19th, 2003
Contact: Trevor Lennox
Phone: (306) 778-8294
Email: tlennox@agr.gov.sk.ca or
Contact: Karyn Scalise
Phone: (306)352-0472
Email: pcap@sasktel.net

4. WBDC Field Day

Location: Termuende Research Farm
Date: June 25th, 2003
Contact: Dr. Bart Lardner
Phone: (306) 933-5700
Email: blardner@agr.gov.sk.ca

5. Canadian Cattlemens Association Semi-Annual Mtg and Convention

Location: Moose Jaw, SK
Date: August 13-16th, 2003
Contact: Carrie Kimmel
Phone: (306) 757-8523
Email: ssga@sasktel.net

6. Interprovincial Grazing Conference

Location: TBA
Date: early December, 2003
Contact: Carrie Kimmel
Phone: (306) 757-8523
Email: ssga@sasktel.net

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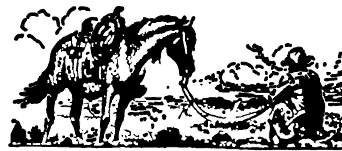
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The Committee thanks the contributors and funders that made this issue possible. Please contact committee members if you have ideas for future articles - the next issue will be published in October 2003.



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Development Centre



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