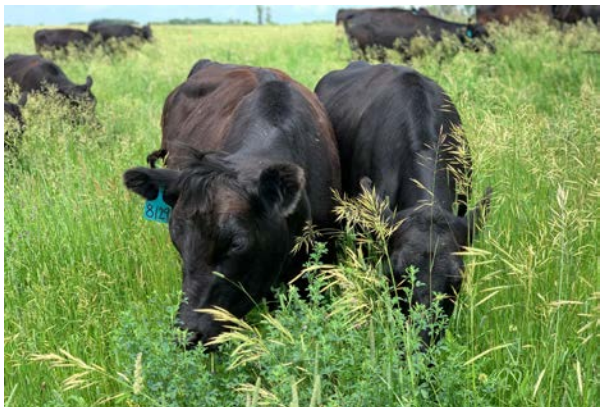
MANITOBA AGRICULTURE AND RESOURCE DEVELOPMENT

Beef and Forage Technical Bulletin

Forages – Planned Grazing – Knowing when and how to graze your animals on pasture

Planned grazing refers to the process of moving livestock from paddock to paddock in a pasture, at the correct time and for the correct duration. This allows the animals to recycle nutrients, disturb and aerate the soil slightly, and trigger plants to re-grow faster and healthier. Ranchers have a vested interest in managing their pastures, for the best results in terms of production, profitability and sustaining natural resources on the landscape.



An ongoing project has been undertaken at the Manitoba Beef and Forage Initiatives Research farm (MBFI) near Brookdale, Manitoba for a number of consecutive years. Monitoring of forage readiness in the spring, yield measurements, as well as plant species diversity and animal performance are being measured. A video presentation has been developed on plant readiness and can be viewed here: www.youtube.com/watch?v=FLY64DRBrY0

This small project is comparing 25 cow/calf pairs on 90 acres of continuous grazed pasture to 25 cow/calf pairs on 90 acres of planned grazing, where the planned herd is moved daily on approximately one acre pieces. The continuous herd has continuous access to the pasture for the entire grazing season as the name implies. What has been the most consistent finding, is that where rest on the paddocks is allowed to happen (while one paddock is being grazed, the other paddocks are allowed to rest, recover and regrow), the forages come back faster in the spring and have higher yields. For example, there was a 28 per cent increase in productivity in 2019 and a 16per cent increase in 2020 in the planned over the continuous grazing management strategies. Productivity also is dependent upon adequate moisture. The project is targeting a 75 day rest period between grazing on the paddocks during the active growing season.

Average Animal Unit Months (AUM) per acre on the Planned and Continuous Grazing Paddocks at the Brookdale MBFI Farm

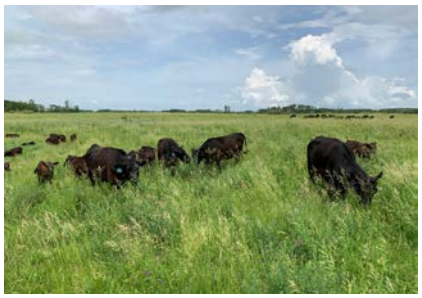
Paddock	AUM/Acre (2019)	AUM/Acre (2020)
Planned A (16.8 acres)	1.31	**2.87**
Planned B (18 acres)	**2.57**	**2.24**
Planned C (8.1 acres)	1.04	1.21
Planned D (5.7 acres)	1.07	1.01
Planned E (10.8 acres)	**2.95**	**2.25**
Planned F (10.4 acres)	1.01	1.05
Planned G (21.1 acres)	**2.54**	1.18
Continuous Pasture (89.9 acres)	1.28	1.42

One animal unit is defined as a 1,000 lb. (450 kg) beef cow with or without a nursing calf with a daily requirement of 26 lb. (11.8 kg) of dry matter forage. One AUM is equal to 780 lbs (355 kg) of dry matter forage (30 days X daily forage requirement). Paddocks listed in bold were grazed twice in that year.

The planned paddocks are also showing better composition of desirable species such as alfalfa, smooth brome and milkvetch. Kentucky bluegrass and meadow brome grass as well as white aster – a less productive and desirable species, appear to be the dominant species in the continuous pastures. Multiple paddocks in the continuous pastures are showing signs of degradation with regards to soil exposure and lack of ground cover. For a complete report on the ongoing project please go to the MBFI website here www.mbfi.ca/forage-grassland-productivity

Manitoba

Farm Business Management – How to determine the value of pasture rent



Over recent years, land prices have continued to rise, which brings up a common question among many Manitoba cattle producers, "How do I determine the value of pasture rent"?

The major impacts on pasture rent are carrying capacity and forage quality of the pasture. The nutritional availability from the pasture needs to equate to pounds gained by the animals grazing it. Other factors to consider are: who is maintaining fence and water supply, who is checking and treating sick animals, and monitoring and delivering minerals to the pasture. All of these factors influence the value of pasture rent. Latest data from the Manitoba Agriculture Beef COP outlines five different pasture types ranging from $0.82 cents per day to $1.12.

Pasture Options – Cost Summary

Operating Costs	Marginal Pasture	Improved Pasture	Crown Lands	Community Pasture	Rented Pasture
Total Operating and Fixed ($/acre)	$22.07	$70.77	$7.87	-	$25.94
Total Operating and Fixed ($/year)	$33,101	$36,165	$31,481	$45,225	$38,906
Cost per cow (135 days pasture)	$110.34	$120.47	$104.94	$150.75	$129.69
Cost per cow per day (135 days pasture)	$0.82	$0.89	$0.78	$1.12	$0.96

Producers interested in what the cost of owning pasture is or comparing what pasture systems are the most economical in their own situation should check the Beef Cow Calf budget, which has a full cost out of 5 different pasture systems. Put in your own costs, carrying capacity, % land equity, type of fence, type of watering system and you can quickly see what the cost of different pasture systems are. Go to the Manitoba Agriculture and Resource Development website under Cost of Production: Livestock to the Beef 300 Cow-Calf Production Costs spreadsheet under the pasture tab. www.manitoba.ca/agriculture/farm-management/production-economics/cost-of-production.html

If a producer is more interested in determining pasture rent based on land value, refer to the table below. Keep in mind taxes are an extra expense and are added to the cost of pasture rent. The Pasture Rental Rate Calculator under Cost of Production: forages on the Manitoba Agriculture and Resource Development website, can generate values on any number of acres. The variables that are taken into account are: acres of pasture, days grazed, the number of animals and the average weight of those animals grazing. Below you can see three examples of land values from $600 to $1000 acre land value. The rent ranges from $0.76/head per day to $1.25/head per day or $20 an acre to $33 per acre respectively. As land value increases, it is imperative that producers see an increase in carrying capacity or gains of that pasture to keep the value of rent reasonable.

Pasture Rent Calculator

Input Data			
Number of Pasture Acres	160		
Days Grazed	132	(4.4 Months)	
Number of Cow Calf Pairs Grazed	32	(5280 Animal Unit Months or AUMs)	
Beef Cow Weight (lbs.)	1,350	(1.25 Animal Unit or AU value)	
Renting by the Acre – Based on Land Value	**Low Range**	**Mid Range**	**High Range**
Land Value/Acre	$600.00	$800.00	$1,000.00
Land Tax/Acre	$3.50	$4.50	$5.50
Expected Annual Return	2.75%	2.75%	2.75%
Pasture Rent/AUM	$18.15	$24.04	$29.94
Total Pasture Rent	$3,200	$4,240	$5,280
Pasture Rent/Acre	$20.00	$26.50	$33.00
Pasture Rent/Head/Season	$100.00	$132.50	$165.00
Pasture Rent/Head/Day	**$0.76**	**$1.00**	**$1.25**

An example demonstrating an increased carrying capacity to 45 cow / calf pairs grazed for the season, shows a major impact to rental rates on a per head per day basis. Now there are rental rates ranging from $0.54 cents head per day to $0.89 cents head per day. Because this value is based on return per acre relative to land value per acre, the rental rates per acre stay the same at $20 to $33 per acre. As carrying capacity increases, nutritional demands will have to be monitored, but efficiency can be gained with proper management based off the same rent per acre. Increased grazing management is key to increasing carrying capacity.

Input Data			
Number of Pasture Acres	160		
Days Grazed	132	(4.4 Months)	
Number of Cow Calf Pairs Grazed	45	(7392 Animal Unit Months or AUMs)	
Beef Cow Weight (lbs.)	1,350	(1.25 Animal Unit or AU value)	
Renting by the Acre – Based on Land Value	**Low Range**	**Mid Range**	**High Range**
Land Value/Acre	$600.00	$800.00	$1,000.00
Land Tax/Acre	$3.50	$4.50	$5.50
Expected Annual Return	2.75%	2.75%	2.75%
Pasture Rent/AUM	$12.90	$17.10	$21.29
Total Pasture Rent	$3,200	$4,240	$5,280
Pasture Rent/Acre	$20.00	$26.50	$33.00
Pasture Rent/Head/Season	$71.11	$94.22	$117.33
Pasture Rent/Head/Day	**$0.54**	**$0.71**	**$0.89**

Producers who are renting pasture need to have a written and signed agreement indicating both parties agree to outlined terms. Sample pasture rental agreements can be found at this link www.manitoba.ca/agriculture/farm-management/contracts-and-leases/index.html

For more Information, please call: Ben Hamm – Farm Management Specialist

Livestock – Upcoming Stock Talk Webinars

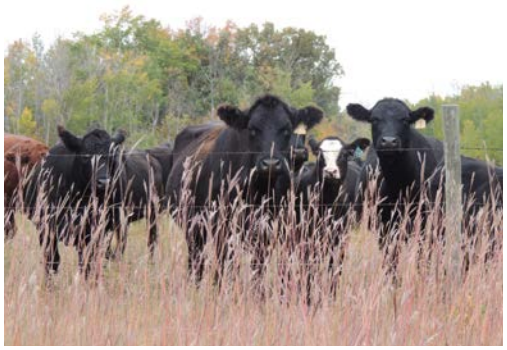
Manitoba Agriculture and Resource Development is offering a series of interesting livestock and forage presentations packed with information and innovative leading experts aimed to help Manitoba beef producers best manage their cattle operations.

March 18, Forage Frenzy

Extended Grazing with Stockpiled Forage, Corn, Swath & Bale Grazing
Presented by Shawn Cabak, Livestock Extension Production Specialist

Improve Livestock and Pasture Performance with Rotational Grazing
Presented by Pam Iwanchysko. Livestock Extension Production Specialist

Western Livestock Price Insurance and Forage Insurance Programs
Presented by MASC



April 15, Forage Frenzy II

Growing Enough Cow Chow – Perennial Forage Rejuvenation
Presented by Tim Clarke, Livestock Production Extension Specialist

Annual Cocktails & Mixtures for Cover Crops
Presented by Kevin Elmy, Cover Crops Specialist

For more information, call the Manitoba Agriculture Portage Office at 204-239-3352 or visit our website www.manitoba.ca/agriculture/online-resources/stock-talk.html

To assist cattle producers in keeping better calving records along with culling, treatment and herd management information, a shirt pocket record book is available from your local MASC or Manitoba Agriculture and Resource Development office.

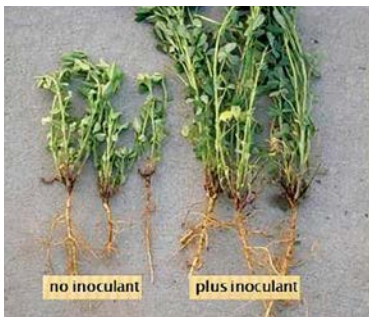
What are some factors to consider when seeding down or rejuvenating forages?

Field preparation is critical in successful forage establishment as forage seeds are smaller than most other crops, and therefore cannot germinate and successfully establish if seeded too deep. The larger a seed is the deeper depth from which it can germinate and establish. The chart below from research done by Dr. Ken Clark at the University of Manitoba of M illustrates what percentage of forage seeds successfully establish at various seeding depths.

An ideal seed bed should be smooth and firm, mellow not lumpy; and with the forage seeds in good contact with the soil. (i.e. packed, and an inch deep or less).

Weed problems should be controlled before seeding, either via tillage or non-selective herbicides. The overall effect of using weed control plus fertilizer is illustrated by this chart from a study done in Tolstoi in southeast Manitoba on non-cultivated grass stands. Adding phosphorus fertilizer roughly doubled the number of forage seeds that became established plants.

Strong Response to Inoculant



Fertilizing according to soil tests will pay big dividends not only in getting a good catch, but also in yields and reduction of winterkill.

Forage producers are fortunate to have a number of species of legumes to choose from in their hay and pasture seed blends. Legumes have the unique advantage of "fixing" or taking free nitrogen from the air (which is 76.06 per cent nitrogen) and bringing it into the plant to supply it with nitrogen; which happens to be the nutrient required in the largest quantities by plants (after water). For legumes to fix free unlimited supply of nitrogen they need to be inoculated at seeding time with the correct nitrogen fixing bacteria. The photo below shows three alfalfa plants on the left which were not inoculated with nitrogen fixing bacteria, while on the right three plants which were inoculated. Which would you prefer in your hay field?

Effect of Seeding Depth

Seeding Depth in a Clay Loam Soil	Seeding Depth			
Species	5/8 inch 1.5 cm	1 3/8 inch 3.5 cm	2.0 inch 5 cm	3.0 inch 7.5 cm
Timothy	89%	39%	12%	0%
Crested Wheat	90%	45%	0%	0%
Brome Grass	95%	80%	24%	10%
Russian Wild Rye	95%	76%	0%	0%
Intermediate Wheat Grass	90%	85%	0%	50%
Kentucky Blue Grass	43%	4%	1%	0%
Alfalfa	64%	45%	19%	0%
Sweet Clover	51%	26%	14%	0%

Ref: Ken Clark, U of Manitoba

Non-bloat legumes such as bird's foot trefoil and cicer milkvetch can fix up to 100 and 140 pounds/acre/year of free N; valued at $60-$85/acre/year if you had to buy urea nitrogen to replace the free N. Higher yielding alfalfa, the queen of the forages, can fix up to 200 pounds/acre/year; worth over $120/acre/year.

Perennial forages' inoculants live for years on the plants and in the soil. While annual legume inoculants need to be inoculated every year. Even having to inoculate peas or soybeans at $20/acre inoculant, fixing over $100/acre/year represents good value for those annually cropping.

This is a long-term Investment – Take care!

Renovation System	% of Seeded Plants of the Total Plant Population (June 2003)	
	Herbicide plus Phosphate	Herbicide with no Phosphate
Sod Seed	57%	29%
AerWay & Broadcast Seed	80%	48%
Drag and Broadcast Seed	80%	44%
Broadcast	30%	39%

Ref: Ken Clark, U of Manitoba

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If you would like to be added to our information-sharing list, please email or text Juanita Kopp (Juanita.Kopp@gov.mb.ca, 204-825-4302). Our livestock team will be focusing on the *5% Rules for Productivity and Profitability* as presented by BCRC. We will also present webinars or virtual training in the near future. Your input or topic ideas are always welcome. We will try to address them during the year.