LEM NEWS

Livestock Environmental Management Newsletter

Volume 4, Issue 1. January 2015.

Mortality Composting

During 2014, a cooperative project between the NDSU LEM program and Jim Hennessy from Mountrail County demonstrated mortality composting to livestock producers on their own turf.

Hennessy worked with local livestock producers to locate a composting site between two separate farms. These two producers collaborated on everything from site preparation to maintenance, and included a public field day at which 75 people viewed the project.

In mid-April, the site was selected and prepared. The

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Greetings!

It's time again for a clean slate and fresh start. New goals are set, new ideas are flowing and new programs are being planned.

The LEM program will start the year off with a brand new program specifically for custom livestock manure haulers. Following that I will be focusing on county crop plot demonstration sites showing the usefulness of manure as a fertilizer. Small farm nutrient management is also on the radar for 2015.

The livestock environmental management and nutrient management programs from the CREC as well as others from NDSU will represent North Dakota at the national Waste to Worth 2 meeting in Seattle this spring and I plan to take another manure hauler to the North American Manure Expo in Pennsylvania this summer. This fall will focus on alternative winter feeding techniques (think bale grazing) with (fingers crossed) demonstration sites! Of course, the program staples will remain part of the plan as well. Nutrient management day, mortality composting and a special focus on small and medium animal feeding operations are always on the forefront of programming.

As we head into this New Year, I invite you to take some time to record your goals and plan for the coming days for your operation. Written records now can save you from a headache later. Remember, if you have any nutrient management questions, from manure or mortality management to fertilizer management, I am always available for on-farm individual visits. You can contact me at mary.berg@ndsu.edu or 701/652.2951. Happy New Year! —*Mary Berg*

Site preparation for the Mountrail County mortality compost demonstration. Inset:: temperatures range from 130F to 200F during active decomposition.

In This Issue

Editing and layout: Linda Schuster, Carrington REC.

Greetings from Carrington! My name is Anna Taylor and I am the new Animal Scientist at the Carrington Research Extension Center (CREC). I've returned to North Dakota after spending several years at South Dakota State University (SDSU) for my education. I am originally from Mandan, where I grew up on a hobby farm. I pursued an animal science degree at SDSU thinking I wanted to be a veterinarian. During my undergraduate studies I was able to be involved with beef research, which ultimately became a turning point in my career path. I have a broad scope of experiences from my time at SDSU including reproductive physiology, immunology, meat science and ruminant nutrition. My most recent research focused on fetal programming, feedlot nutrition and management, and meat quality.

Anna Taylor, PhD, is CREC's Animal Scientist.

At the CREC Livestock Unit, I look forward to exploring numerous topics including:

- Utilizing cover crops and crop residue to reduce feed costs
- Optimizing backgrounding management techniques
- Evaluating North Dakota agriculture by-products in cattle diets as they impact cattle performance, logistics, and economics
- Impacts of facilities design on beef cattle performance
- The value of being a farmer-feeder
- And the many collaborations at the CREC and at NDSU

I am excited about the opportunities the CREC has to address the needs of crop and livestock producers in North Dakota. I look forward to meeting you down the road!

—Anna Taylor, CREC Animal Scientist

WASTE TO WORTH Conference

'From Waste to Worth - Advancing Sustainability in Animal Agriculture' International Conference on Livestock and Poultry Environmental Quality will convene at the Westin Hotel in downtown Seattle, WA March 30 – April 3, 2015.

Join a national network of agricultural professionals for four days of technical sessions, tours, networking, and social events featuring the indigenous culture of Puget Sound. Oral, poster, panel, and workshop proposals addressing the general themes of air, water & soil quality, watershed management, climate change, and research & outreach will be part of the program.

To register for the conference, become a vendor or sponsor, make hotel reservations, or for more information visit www.wastetoworth.org.

Mortality Composting

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ground was leveled using agricultural equipment owned by the producers. A two-foot straw base was laid with a bale shredder. Frozen livestock mortalities from both producers were placed over the base. The mid-layer, eight inches of manure, was added next. Two more feet of shredded straw was added in the same manner as the base.

Hennessy and the LEM team monitored the project for temperature and predators (just a few mice) until the public field day in mid-October. The pile was opened so participants could view the composted livestock mortalities. Some clean long-bones remained to decompose.

The cooperating producers will either use the finished product to start another mortality compost pile or spread it as field fertilizer.

I would like to thank Jim Hennessy, Jim Enge, and Alex Kraft for your participation in this project. I appreciate your willingness to work with the LEM program and thank you for your donation of time and equipment.

If you are interested in having a mortality composting project near you, please contact Mary at 701/652-2951 or mary.berg@ndsu.edu.

What's in a Plan?

A nutrient management plan (NMP) has been defined by eXtension as "a specific plan for managing nutrient applications in order to achieve the greatest economic benefit and the greatest environmental protection." One could argue that this is the goal of every agricultural producer in the nation.

However, while most crop and livestock producers *plan* to raise their products in a profitable fashion with high stewardship standards, not everyone has that *plan* on paper. Having an NMP can help you: manage animal ~~waste~~ nutrients and commercial fertilizer input costs, and improve North Dakota's surface water quality.

So why is having a plan important, and why should it be down on paper? Besides having hardcopy records in the event of a dispute, a plan gives your operation a direction and purpose. Knowing what you plan to do in the future can alter decisions (financial and production) you make today.

An NMP basically is recordkeeping on paper (not by memory). Records of soil test results, manure nutrient analysis results, cropping history, commercial fertilizer use, manure spreading, field maps and weather constitute an NMP and can help an operation benchmark and plan for the future.

For help creating an NMP for your operation, whether you raise crops, livestock, vegetables or a combination of these, contact Mary Berg, area Extension livestock environmental management specialist at the Carrington Research Extension Center, at mary.berg@ndsu.edu.

NORTH DAKOTA DEPARTMENT of HEALTH

Commentary from the CAFO Corral

It was a busy year for the North Dakota Department of Health. Seventy-six CAFO operations and 22 AFO operations were inspected by the department. Throughout the inspection season, the big issue for the CAFO operators was record keeping: several of the operations had incomplete Nutrient Management records or misplaced records.

After visiting these CAFO operations, the NDDoH has decided to create a better record keeping system for the CAFO operators. This coming inspection year operators will receive a binder that will contain:

- CAFO Permit to Operate
- A file area for keeping field maps
- A file area for soil and manure sample test results
- Manure Field Application Records
- Containment Pond Management Records
- Waterline and feedlot inspection records
- Monthly Weather Condition Records
- Mortality Records

The binder will also contain a record keeping spreadsheet on a CD and a list of what records are required by the NDDoH.

If you have any questions about the new record keeping system, department staff would be happy to visit with you at your convenience. Please contact our office at (701) 328-5210.

–Rachel Fast, ND Dept of Health

Nutrient Management Plans include soil, cropping, and manure data and application records.

Bale grazing: A new approach to an old concept

Penny Nester, Kidder County Extension Agent

Many of us have heard of bale grazing. Maybe your grandfather did it or conservationists in warmer climates do it. Or possibly, you know it as a winter feeding approach that you or a neighbor is implementing.

First off, let's explain what a bale grazing system is. There are two basic types of systems: extensive and intensive, based on bale placement density.

When most people think of bale grazing, they think of a traditional extensive system, when bales are left where they were ejected from the baler (two to four bales per acre), and cattle are allowed to graze those bales free choice until the hay runs out (or the cattle break out of fencing). Those that tried this system in the past found the results less than favorable. A lot of hay was wasted, cattle may not have gained well, and shelter and water were issues.

An intensive system utilizes bales placed in close proximity to each other, in most cases 40 feet apart in a grid (25 bales per acre). Bales are either placed in preexisting paddocks or fenced off with temporary (electric) fencing, allocating several days' of feed at a time. Animals are rotated into new areas when feed runs short. When properly managed, an intensive bale grazing system does not compromise the health, comfort or performance of livestock regardless of the cold winter climate in North Dakota.

Temporary fencing can be posted from adjacent paddock bales.

When bale grazing, several management issues need to be addressed for the system to be successful.

First, animals must have access to water. This can be a challenge in the winter months, especially if water is hauled to the particular site.

Animals also need shelter, such as a portable windbreak, permanent windbreak, or a shelter belt. Shelter should be separate from water and supplement placement to reduce manure accumulation and nutrient concentration.

Most importantly, feed resources need to be considered. Bale grazing is not recommended for cows that need to add body condition before calving. Bale grazing works best with animals that can maintain condition throughout the grazing time.

Nutrient testing of forages before bale placement is especially important to ensure animal requirements are met. Successful producers feed 2/3 high-quality hay and 1/3 lower-quality hay or straw during each rotation. Cattle will begin the rotation by selecting the higher quality feed, and then eat the low-quality forage toward the end of the rotation. This also enables cattle to use the lower quality forage as a bedding source and minimizes waste of higher quality forage.

Animal must be monitored and energy supplements may be added during severe cold spells.

Intensive bale grazing offers both economic and environmental advantages when compared to traditional intensive winter feeding. Economically, bale grazing can reduce the costs for labor, machinery, and fuel, for feeding and manure handling. Environmentally, research shows increased nitrogen capture in the soil profile compared to intensive feeding in a corral followed by manure spreading with equipment.

Proper site selection with bale density management will ensure the nutrients from manure, urine, and leftover material are uniformly deposited at acceptable rates to enhance forage growth and minimize excessive nutrient load

(Continued on page 5)

Intensive bale grazing offers both economic and environmental advantages .

Bale Grazing

(Continued from page 4)

and runoff. Grazing sites should be tame hay or pasture; it is not recommended to bale graze on native prairie. Bale grazing on native prairie allows an opportunity for introduction of invasive plant species.

Producers should expect residue the following growing season, but residue can be spread evenly for degradation by using a harrow. While it does take time for the bale sites to regrow, after the second growing season, forages often grow more abundantly on bale site areas compared to the rest of the field.

Bale grazing is just one tool that operators can use to extend the grazing season into the winter. Operators must determine what works best for their operation.

For more information on winter feeding, check out the NDSU Extension publication "Alternative Winter Feeding Strategies for Beef Cattle Management" at http://tinyurl.com/winterfeedingstrategies.

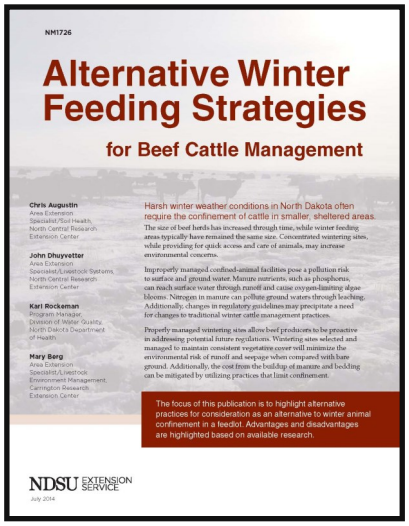
Source: Lorne Klein, PAg, and Travis Peardon, PAg. (June 2012). Bale Grazing. Retrieved from http://www.agriculture.gov.sk.ca/Default.aspx?DN=7d86096d-566b-4c5d-b9c6-7019b64b9728

—Penny Nester, NDSU Extension Agent Kidder County (Agriculture and Natural Resources)

Economics of a Long-term Cropping System at the Carrington REC

In 1987, a long-term cropping systems study was initiated at the NDSU Carrington Research Extension Center (CREC). The study consists of cycles of three, 4-year crop rotations with three replicates (See figure below). In 2003, at the beginning of the fifth cycle, the base rotation was updated to reflect the changes in crop production that occurred since inception of this study. The seventh cycle began in 2011. The new base rotation is: Hard Red Spring Wheat - Sunflower - Barley - Soybean (Rotation 1). The other two current rotations are Hard Red Spring Wheat - Field Pea - Corn - Soybean (Rotation 2) and Hard Red Winter Wheat - Corn - Soybean - Canola (Rotation 3). The last rotation is also split to include a cover crop vs. no cover crop component between each grain crop. Each crop within each rotation is planted every year.

(Continued on page 6)



NM1726 Alternative Winter Feeding Strategies for Beef Cattle Management

This publication highlights alternative feeding options for beef cattle as opposed to confinement in a drylot during the winter months. Advantages and disadvantages of each option are highlighted in this publication based on available research. Options include:

- Custom feeding
- Extending the grazing season
- Bale grazing
- Swath grazing
- Use of rested pastures

Considerations for shelter, water and site selection are also included in this publication. NM1726 is available by going to this link: www.ag.ndsu.edu/lem/resources. You may acquire a hard copy by contacting mary.berg@ndsu.edu.

Cropping System

(Continued from page 5)

The goal of the study is to determine the singular or combined effects of crop rotation, tillage system, N fertility levels and sources, on crop grain and biomass production, crop diseases, soil nitrogen, soil phosphorous, soil organic matter, and soil pH.

Tillage treatments (conventional, minimum and no-till) are imposed along the North-South direction, while the fertility treatments (nitrogen rates and sources) are imposed along the East-West direction (pictured above). Urea is used as an N source and it is applied each spring to non-leguminous plots at 0, 50, or 100 lbs. of N/ac, and composted beef feedlot manure is applied once in the spring at a rate of 200 lbs. of N/ac on the first year of each cycle. As seen on the picture above, this arrangement of the treatments yields 12 sub-plots within each crop plot.

Previous statistical analysis of yield data for this trial showed that tillage and fertility treatments are mains factors affecting crop yields. Earlier this year we decided to look at the economics of some of the crops planted within this long term cropping system. The crops (barley, corn, field peas, soybean and hard red spring wheat (HRSW)) and period of time (from 2008 to 2013) covered on this article were based on the availability of data to compute the production costs (tillage, fertilizer, seeds, chemicals, seeding, combining, overhead and land) and gross return (crops yield and prices). The economics were run based on two scenarios: **Scenario 1 (SCN 1)** – you own the compost and your only cost would be to haul it; **Scenario 2 (SCN 2)** – you pay for unit of N in the compost the same price paid per unit of N in commercial fertilizer.

Average Net Income[1], $/ac (2008-2013)

Fertility	Barley[2,3]	Corn	Field Pea	Soybean	HRSW[2,4]
Minimum Tillage					
0N	-44.90	228.09	77.98	144.05	-2.28
50N	58.25	278.42	88.62	149.52	54.51
100N	-11.27	295.91	86.30	134.59	51.74
COMP. SCN 1	133.66	298.25	169.45	216.41	37.86
COMP. SCN 2	106.36	272.50	143.70	190.66	12.56
No-Tillage					
0N	-18.12	206.21	118.13	188.16	29.29
50N	39.99	298.46	83.23	170.86	70.39
100N	-1.47	266.90	76.68	163.41	63.73
COMP. SCN 1	42.17	327.54	138.51	258.15	62.13
COMP. SCN 2	14.87	301.79	112.76	232.40	36.83
Conventional Tillage					
0N	-47.64	214.52	55.47	129.24	9.10
50N	33.82	287.26	44.68	137.93	49.66
100N	6.03	274.36	24.74	140.42	34.36
COMP. SCN 1	47.71	316.94	130.45	212.98	32.37
COMP. SCN 2	20.41	291.19	104.70	187.23	7.07

1 Provisional data. Yields are currently under revision.

[2] 2008 data not included in the average (no protein data).

[3] Barley: Prot.>12%= feed barley; Prot.<=12%= malting barley.

[4] Wheat Protein Discount= $0.08 per every 0.2% below 14%.

MAN/COMP = COMP. SCN 1.

Average Crop Yields, bu/ac (2008-2013)

Fertility	Barley	Corn	Field Pea	Soybean	HRSW
Minimum Tillage					
0N	25.9	94.2	33.0	28.9	30.3
50N	53.3	111.7	34.5	29.1	40.5
100N	56.3	120.7	33.9	28.1	41.7
MAN/COMP	62.9	115.0	44.8	35.2	42.4
No-Tillage					
0N	31.6	91.3	37.6	32.2	33.9
50N	53.4	114.7	33.9	30.8	41.9
100N	49.7	113.9	32.8	30.0	43.9
MAN/COMP	58.0	121.1	40.6	37.9	46.7
Conventional Tillage					
0N	27.0	93.3	30.8	28.1	32.1
50N	49.7	112.5	29.1	28.9	40.6
100N	56.9	117.7	27.3	29.0	40.2
MAN/COMP	58.3	119.6	40.0	35.0	42.0

Crop prices ($/bu)used for the economics calculations.

Year	Feed Barley	Mal. Barley	Corn	Field Pea	Soybean	HRSW
2008	3.99	5.43	3.74	7.80	8.13	7.19
2009	2.07	4.24	3.18	5.06	9.43	4.90
2010	3.12	3.95	5.01	5.68	10.30	6.78
2011	5.06	5.50	5.81	9.18	11.25	8.17
2012	5.36	6.72	6.46	9.54	15.74	8.19
2013	4.14	6.33	4.52	8.05	12.15	7.67

Some notes about the tables above and findings of this study:

- Green and red numbers represent, respectively, positive and negative net income. The higher values for both average net income (left) and average crop yields (right) are highlighted in green.
- As an average of 6 years, the beef feedlot composted manure under scenario 1 (COMP. SCN 1) showed higher net income in all tillage systems for barley, corn, field pea and soybean.
- Under scenario 2 (COMP. SCN 2) that treatment showed to be more profitable in all tillage systems for field pea and soybean.
- The lower net income seen for barley with 100 lbs. N/ac was due to its higher protein content (>12%), which led to a lower price paid for product (feeding barley).
- It seems that there is an interaction between minimum tillage and the 100 lbs. N/ac, where barley protein content was >12% in 4 out of 5 years of data.
- For HRSW, the 50 lbs. N/ac rate showed to be the most profitable treatment in all tillage systems.
- As an average of 6 years, with the exception of corn under minimum tillage, the beef feedlot composted manure treatment out yielded the other treatments by at least 2 bu/ac for all the crops listed on the table above.
- The higher HRSW yields seen on the manure treatment did not reflect in higher net income. That was due to the lower HRSW's protein content.
- Average (2009-2013) discounts for HRSW, due to lower protein, under the compost treatment were $48.60/ac, $59.20/ac and $43.40/ac for minimum, no-till and conventional tillage, respectively.

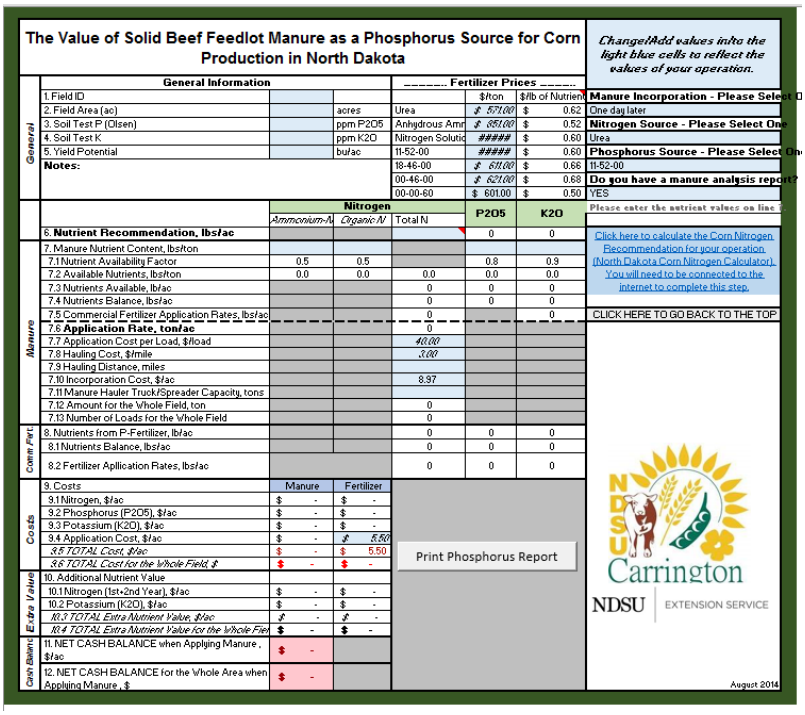
—Paulo Flores, Nutrient Management Specialist

NDSU Manure Application Calculator for Corn

Paulo Flores, Nutrient Management Specialist at the NDSU Carrington Research Extension Center, developed an Excel spreadsheet (NDSU Manure Application Calculator for Corn; hereafter "Calculator") that allows farmers to compare the nutrient value, on a cash basis, of solid beef feedlot manure as a source of nitrogen (N) and phosphorus (P) to commercial fertilizers for corn production in North Dakota. Calculations are based on the assumption that the cost per unit of nutrients for manure and commercial fertilizers are the same, and they vary according to the price of different fertilizer sources that producers can choose from in the spreadsheet.

On this second version, sulfur ($S\text{-}SO_4$) calculations were added in addition to those regarding N, P and potassium (K, as K_2O) present in the first version. Moreover, the manure cash value on this version is calculated with and without considering the extra K_2O provided by manure application for those producers that would not apply K_2O on their operations.

Information regarding field (area, soil nutrient content), crop (yield potential, nutrient recommendations), commercial fertilizers (price, nutrient content, application cost and rate), manure (nutrient content, availability factors, additional nutrient value, application cost and rate) and interactions amongst some of those variables are taken into consideration in the calculations.



The Value of Solid Beef Feedlot Manure as a Phosphorus Source for Corn Production in North Dakota

Change/Add values into the light blue cells to reflect the values of your operation.

	General Information			------- Fertilizer Prices -------	$/ton	$/lb of Nutrient
General	1. Field ID					
	2. Field Area (ac)		acres	Urea	$ 571.00	$ 0.62
	3. Soil Test P (Olsen)		ppm P2O5	Anhydrous Amr	$ 851.00	$ 0.52
	4. Soil Test K		ppm K2O	Nitrogen Solutic	#####	$ 0.60
	5. Yield Potential		bu/ac	11-52-00	#####	$ 0.60
	Notes:			18-46-00	$ 811.00	$ 0.66
				00-46-00	$ 621.00	$ 0.68
				00-00-60	$ 601.00	$ 0.50

Manure Incorporation - Please Select O
One day later
Nitrogen Source - Please Select One
Urea
Phosphorus Source - Please Select One
11-52-00
Do you have a manure analysis report?
YES
Please enter the nutrient values on line 7

		Nitrogen				
		Ammonium-N	Organic N	Total N	P2O5	K2O
	6. **Nutrient Recommendation, lbs/ac**				0	0
Manure	7. Manure Nutrient Content, lbs/ton					
	7.1 Nutrient Availability Factor	0.5	0.5		0.8	0.9
	7.2 Available Nutrients, lbs/ton	0.0	0.0	0.0	0.0	0.0
	7.3 Nutrients Available, lb/ac			0	0	0
	7.4 Nutrients Balance, lbs/ac			0	0	0
	7.5 Commercial Fertilizer Application Rates, lbs/ac			0		0
	7.6 **Application Rate, ton/ac**			0		
	7.7 Application Cost per Load, $/load			40.00		
	7.8 Hauling Cost, $/mile			3.00		
	7.9 Hauling Distance, miles					
	7.10 Incorporation Cost, $/ac			8.97		
	7.11 Manure Hauler Truck/Spreader Capacity, tons					
	7.12 Amount for the Whole Field, ton			0		
	7.13 Number of Loads for the Whole Field			0		
Comm. Fert.	8. Nutrients from P-Fertilizer, lb/ac			0	0	0
	8.1 Nutrients Balance, lbs/ac			0	0	0
	8.2 Fertilizer Application Rates, lbs/ac			0	0	0

	9. Costs	Manure	Fertilizer
Costs	9.1 Nitrogen, $/ac	$ -	$ -
	9.2 Phosphorus (P2O5), $/ac	$ -	$ -
	9.3 Potassium (K2O), $/ac	$ -	$ -
	9.4 Application Cost, $/ac	$ -	$ 5.50
	9.5 TOTAL Cost, $/ac	$ -	$ 5.50
	9.6 TOTAL Cost for the Whole Field, $	$ -	$ -
Extra Value	10. Additional Nutrient Value		
	10.1 Nitrogen (1st+2nd Year), $/ac	$ -	$ -
	10.2 Potassium (K2O), $/ac	$ -	$ -
	10.3 TOTAL Extra Nutrient Value, $/ac	$ -	$ -
	10.4 TOTAL Extra Nutrient Value for the Whole Field	$ -	$ -
Cash Balance	11. NET CASH BALANCE when Applying Manure, $/ac	$ -	
	12. NET CASH BALANCE for the Whole Area when Applying Manure, $	$ -	

Click here to calculate the Corn Nitrogen Recommendation for your operation (North Dakota Corn Nitrogen Calculator). You will need to be connected to the internet to complete this step.

CLICK HERE TO GO BACK TO THE TOP

Print Phosphorus Report

Carrington NDSU EXTENSION SERVICE

August 2014

The values in the light blue cells are customizable and different options can be selected from the drop-down menus (top right corner), allowing producers to change those values to reflect the numbers of his/her operation. Once the light blue cells are filled out, the Calculator will provide a "Net Cash Value" per acre when using manure instead of commercial fertilizers as a source of N or P for corn. Producers can make changes to the values in the light blue cells and/or pick a different option in the drop-down menus at any time. That can be very useful for producers because it allows them to identify several factors that can affect the economic aspects of manure application, such as the maximum hauling distance and the most adequate truck hauler/spreader capacity. Using the drop down options, producers can use the Calculator to select the most economical combination of fertilizer sources to reach the corn N or P requirements.

The Calculator calculates a balance of nutrients when using manure and/or commercial fertilizer alone on in combination with each other. A negative "nutrient balance" means that additional nutrients are needed to reach the recommended amount of each specific nutrient (N, P, K, S). Calculator will provide the rates and the costs associated with the amount of commercial fertilizer that should be supplied to bring the nutrient balance to zero. There is a "nutrient balance" line when using only manure or fertilizers as source of nutrients for corn production, which are independent of each other. The commercial fertilizer rate line on the "manure section" is the fertilizer rate needed to reach the nutrient recommendations for corn in addition to the manure application. The fertilizer rate on "fertilizer section" is the rate to reach the nutrients recommendations for corn using commercial fertilizers alone.

Once the values are set, producers can print a copy of the N and/or P report (information inside of the green box only), by clicking on the "Print Report" button built into each spreadsheet, or save the file on his/her computer.

Things to know about the Calculator

- ☑ Please "Enable Active Content" on Microsoft Excel so the calculator can perform as expected.
- ☑ On the home screen, producers can choose to apply manure based on "Nitrogen Corn Requirement" or "Phosphorus Corn Requirement".
- ☑ The Calculator is not intended to provide N recommendations for corn. Please visit the "North Dakota Corn Nitrogen Calculator" website to find out the N recommendation for your operation.
- ☑ The Calculator has an option to run using average values for manure nutrient content, but because the amount of nutrients in manure vary greatly, it is strongly recommended that producers have the manure analyzed before they apply it to their fields.

A printer friendly version of the "Documentation/Instructions" and the Calculator can be downloaded from the LEM website (http://www.ag.ndsu.edu/lem).

For comments, questions and/or suggestions please contact Paulo at the Carrington REC, by phone (701.652.2951) or email (paulo.flores@ndsu.edu).

Paulo Flores, Nutrient Management Specialist, CREC.

Custom Livestock Manure Haulers Meeting, February 25, 2015
ARS in Mandan
Agenda and details will be announced soon. Contact Mary Berg for more information.

NDSU Feedlot School Jan. 20- 21

North Dakota State University's Carrington Research Extension Center will hold its annual NDSU Feedlot School on Jan. 20-21, 2015.

This intensive course is for cattle producers, feeders, backgrounders, feed industry personnel, animal health-care suppliers and anyone else who is interested in learning more about feedlot production, nutrition, waste management and marketing. The Feedlot School helps identify the areas for improvement, ranging from feed bunk management to health to business planning to marketing.

The registration fee is $130 per person or $175 for two people from the same operation. All meals and a 3-inch, three-ring feedlot school binder are included in the registration. The deadline to register is Jan. 12. The fee does not include lodging. For more information about the course or to register, contact Joel Lemer, an Extension agent in Foster County, at (701) 652-2581 or joel.lemer@ndsu.edu.

FLYERS ON THESE NDSU WORKSHOPS INCLUDED WITH THIS NEWSLETTER.

NDSU Dairy Cow College Feb. 2-5

The NDSU Dairy Cow College is a joint NDSU Extension Service and Midwest Dairy Association (MDA) educational effort in cooperation with the local county Extension offices and North Dakota State University's Department of Animal Sciences. It will include MDA promotional highlights, American Dairy Association and Milk Producers Association local district meetings, current dairy production and management topics, and a dairy issues dialogue. This year's guest speaker is David Carlson, dairy technical consultant at Elanco in Waukesha, Wis.

Dates and locations include February 2 (KEM Electric Cooperative in Linton), February 3 (Ramada Grand Dakota Lodge in Dickinson), February 4 (Morton County Fairgrounds in New Salem), and February 5 (Ag Country Farm Credit Services in Valley City).

There is no registration fee associated with Dairy Cow College. For more information about the Dairy Cow College, contact Schroeder at (701)231-7663 or jw.schroeder@ndsu.edu or your local Extension agent.

Center Points: Easy as 1-2-3...

The Carrington REC has a weekly blog with updates on what's happening now and information on coming events. Read online at www.ag.ndsu.edu/CarringtonREC or subscribe to receive a weekly reminder and quick link.

Subscribing is as easy as 1-2-3:

1. **Send an e-mail to Listserv@listserv.nodak.edu**
2. **Leave the subject line of the email blank**
3. **In the body (not the subject line) of the e-mail enter the following:**
   SUB NDSU-CARRINGTONREC-CENTERPOINTS yourfirstname yourlastname

OR: Simply send a regular email to Mary.Berg@ndsu.

Contact Us —
NDSU Carrington REC
663 Hwy 281 NE | PO Box 219 | Carrington, ND 58421
Phone 701-652-2951 | Mary.Berg@ndsu.edu
Visit us on the web at www.ag.ndsu.edu/CarringtonREC

"To create learning partnerships that help youth and adults enhance their lives and communities."

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DAIRY COW COLLEGE

2015

Feb. 2 • Linton

KEM Electric Cooperative, 107 S. Broadway

Feb. 3 • Dickinson

Ramada Grand Dakota Lodge, 32 15th St. W.

Feb. 4 • New Salem

Youth Building, Morton County Fairgrounds

Feb. 5 • Valley City

Ag Country Farm Credit Services, 220 Winter Show Road S.W.

All meetings 11 a.m. to 3 p.m. **local time**

Registration and coffee at 10:30 a.m. local time

Highlighted Topics

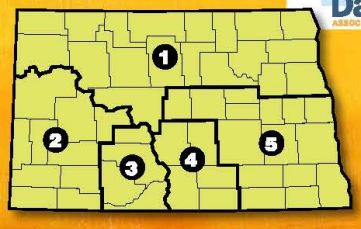
- Managing Rumensin Levels for Optimal Response
- Root Causes and Risk Factors for Milk Fat Depression
- Navigating the Dry and Fresh Periods to Achieve a Successful Transition
- Consequences of Negative Energy Balance and Immune Suppression
- The Veterinary Feed Directive Effect on Your Dairy Enterprise

Speakers

David B. Carlson, Ph.D.
Dairy Technical Consultant
Elanco, Waukesha, Wis.

J.W. Schroeder, Ph.D., Associate Professor
Extension Dairy Specialist
Department of Animal Sciences, NDSU

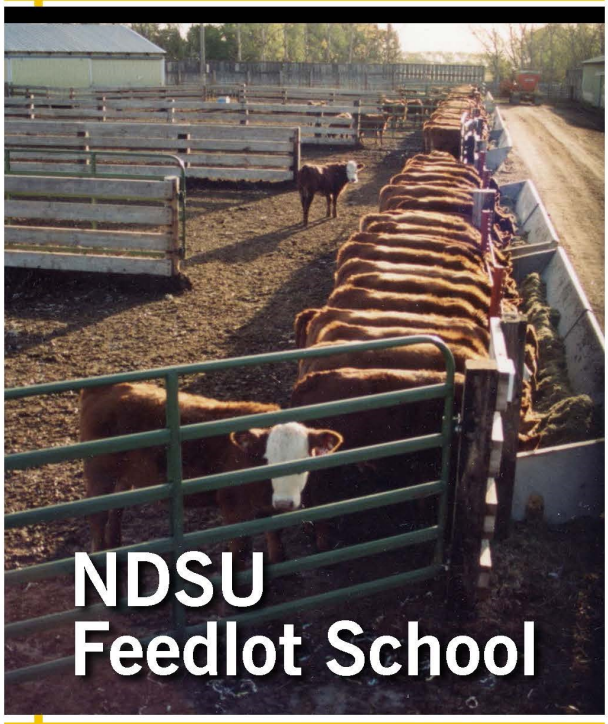
Midwest Dairy Association
and Milk Producers Association
of North Dakota Districts



NDSU EXTENSION SERVICE

NDSU is an equal opportunity institution.

NDSU Extension Service
Foster County



NDSU Feedlot School

Jan. 20-21, 2015

Carrington Research Extension Center
Carrington, N.D.

New markets for finished cattle closer to North Dakota, such as the new packing plant operating in Aberdeen, S.D.; the increased demand for USDA Choice beef; the need for backgrounded feeders to meet feedlot demands; and the ample supply of cattle, feed grains, forages and co-products for feedlot use provide opportunities for feeding cattle in North Dakota and the surrounding region.

Who Should Attend?

This intensive course is for cattle producers, feeders, backgrounders, feed industry personnel, animal health-care suppliers and anyone else who is interested in learning more about feedlot production, nutrition, waste management and marketing.

Registration Information

Cost: $130 per person or $175 for two people from the same operation (includes meals and a Feedlot School information binder). Participants must make their own lodging arrangements.

Topics

Why Feed Cattle in North Dakota
Animal Requirements
Feed Additives and Growth Promoter Technologies
Feed Processing/Mixing and Nutrient Optimization
Ration Formulation/Calf Web
Feeds, Nutrient Analysis and Beef
Livestock Stewardship/Beef Quality Assurance
Disease Diagnosis, Treatments and Health Programs
North Dakota Veterinary Diagnostic Laboratory
Commercial Feedlot Tour (Pipestem Feeders)
Feeding Facilities Review
CREC Feedlot Research Facilities Overview
Low-stress Working Facilities
Feed Testing Techniques
Feed Bunk Reading and Manure Visual Observation
Bunk Reading and Feed Delivery
Budgets for Different Production Scenarios
Business Structure and Aspects of Cattle Feeding
Price Protection With Outlook And Hedging
Nutrient/Manure Management
Employer/Employee Relations
Carcass Quality and Marketing on the Grid
Fine-tuning Price Protection

Registration deadline: Jan. 13, 2015
Limited to 25 participants.

For more information, contact the Foster County office of the NDSU Extension Service

Joel Lemer, Extension Agent
Courthouse, 1000 5th St. N, P.O. Box 80
Carrington, ND 58421-0080
Phone: (701) 652-2581 Fax: (701) 652-2081
Email: joel.lemer@ndsu.edu

NDSU EXTENSION SERVICE

Individuals with disabilities may request reasonable accommodations to participate in NDSU-sponsored programs and events. To request an accommodation, please contact Joel Lemer at (701) 652-2581 at least 10 days before the school.

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