LMMMR News

News from Conservation's Environmental Livestock Program

Summer 2006
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August 1st 2006

Assiniboine Community College will offer on August 1st, 2006 two short courses to help Conservation's clients comply with regulations. The course "***MMP Preparation***" is aimed at livestock operators preparing MMPs. The course "***Livestock Manure Spreading***" targets livestock operators and custom manure applicators. Both courses will provide practical information, equipment operation tips, and field precautions for better ensuring long term compliance with the LMMMReg. For more information, inquire with Terry (ACC - 725-8700, ext 7116) or Marc (945-3789).

Environmental Livestock Program
Headquarters Operations
Manitoba Conservation
Box 46 – 200 Saulteaux Cr.
Winnipeg, MB R3J 3W3
Ph.: 204-945-8553
Fax: 204-948-2420

New Staff

On March 6, 2006, **Marc Trudelle** joined the Environmental Livestock Program team as Soils Specialist. He is responsible for administration of the Manure Management Plan (MMP) program. He is the department's specialist for soil and crop fertility matters related to the environmentally sound application of manure to agricultural land. He will also provide expert advice and educational support services to livestock producers, agri-business, and professional organizations as well as federal and provincial research institutions. Prior to joining Manitoba Conservation, Marc worked for 25 years in Quebec delivering nutrient management planning programs and information to farmers. He developed many tools and extension documents related to MMPs based on both nitrogen (N) and phosphorus (P).

Marc has a B.Sc. as well as a M.Sc. in Soil Science from the Faculty of Agricultural and Environmental Sciences of McGill University. Marc will be pleased to help and advise farmers to comply with the regulation. Marc can be contacted at (204) 945-3789.

On July 10, 2006, **Geoffrey Stephens** joined the Environmental Livestock Program as an Environment Officer. Geoff is a recent graduate from the University of Manitoba with a B.Sc. in Geological Sciences. For the previous 5 years he has been employed as a STEP Student with Manitoba Government. For four years he was employed with Manitoba Water Stewardship in the Groundwater Branch; the past year he has been working in the Environmental Livestock and Petroleum Storage Programs. Geoff can be contacted in the Steinbach regional office at (204) 346-6060.

The Environmental Livestock Program regularly offers temporary positions to university level students. The STEP program offers students a work and learning experience in various branches of Manitoba Government. This year, we had the good luck of hiring three students for the summer months: **Elyse Schade**, **Ouge Wang**, and **Marianne Chatzoglou**. **Elyse** is a second year student in the Asper School of Business, studying marketing and international management. She currently assists with the registration of Manure Management Plans (MMPs) under the supervision of Bryce Wood. Elyse provides valuable information for successfully completing the plans as well as verifying the information pertaining to them. She can be contacted at (204) 945-6168. **Ouge** is a third year Civil Engineering student with a major in Environmental Engineering. She's involved in the preparation and sampling for the auditing program. Ouge assists Marc Trudelle who is responsible for the MMP audit program. **Marianne** is a fourth year Biosystems Engineering student. She assists Sylvio Tessier, in moving forward with the registration of unpermitted manure storage facilities.

Farewells

Travis Parsons, P. Eng. who was Regional Engineer for Western Region, has accepted new challenges with the department of Water

Stewardship's Manitoba Water Services Board. Travis was heavily involved in the review of construction permits for liquid manure storage facilities. His expertise will be missed within our ranks. We thank Travis for his hard work and dedication on behalf of Manitoba Conservation and wish him 'all the best' in his new responsibilities. Sylvio Tessier, P. Eng. (204) 945-8473 will be temporarily assisting Western Region with permits for construction of manure storage facilities until the position can be filled.

MMP Briefs

2005 MMP Audit

The 2005 MMP Audit is over and most of the livestock operators that had been visited have received a letter stating the results from laboratory analysis of soil samples collected at their operation. A total of 48 operations were slated for audit. The spatial distribution of these operations in the province can be viewed in Figure 1. In spite of a very wet spring, and wet conditions that continued in some areas into fall, we were able to carry out the actual field sampling audit at 47 operations.

As expected, the majority of operations were found in compliance. with section 12 of the *Livestock Manure and Mortalities Management Regulation* MR 42/98. These operations were sent a letter stating that indeed, the soil nitrate levels found in our soil samples were below the applicable soil loading limits stated under sub-section 12(1.4), in full consideration of the application of sub-section 12(1.6).

A number of existing operations are spreading manure on agricultural capability class 5 soils. Notification letters were sent to seven (7) livestock operations to indicate that, from fall 2005 onward, they had to comply with either the provisions of sub-section 12(1.4)(c) or alternate soil nitrate N limits.

Two operations presented elevated soil nitrate N levels while not exceeding the applicable soil nitrate N limits by much. These operations were sent an advisory letter suggesting they review their manure management practices so as to avoid risk of excessive soil nitrate N levels.

Finally, six livestock operations were found out of compliance with section 12 of the regulation. Enforcement actions are currently proceeding against these operations. Also, as a result of the audit, we determined that one custom manure applicator was at least partially responsible for the excessive application of manure to a field that was out of compliance. An enforcement action will also result in this situation.

2006 Audit

The 2006 MMP Audit is now underway, with about 50 operations notified and 7 operations audited so far. Spring soil sampling conditions have been generally good so far in most areas of western Manitoba. During the summer we will focus on sampling forage fields, then once the crops are harvested we will sample post harvest until freeze up.

Selected fields are soil sampled for nitrate N levels at a 60 cm (2 ft) depth. However, during the 2006 audit, these fields will also be soil sampled for phosphorus levels at the 15 cm (0-6 inches) depth. Fields are sampled using standard soil sampling protocols, taking a minimum of 15-20 samples per field, which are then composited for analysis.

A legal sampling protocol is strictly followed when handling and submitting soil samples for analysis. Soil samples are sealed and kept on ice or placed in cold storage until delivered to the soil testing laboratory. The laboratory analyzes the samples using a standardized procedure.

Permits for Manure Storage Facilities: *policy changes*

As you know, the province is considering amending the *Livestock Manure and Mortalities Management Regulation* so as to include soil phosphorus (P) thresholds for

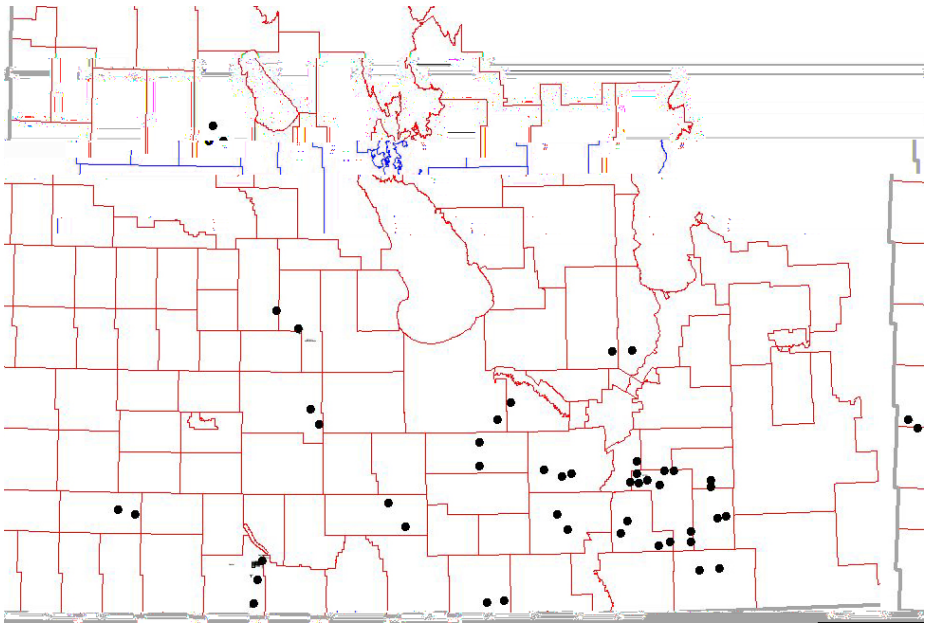


Figure 1. Approximate location of the livestock operations audited in 2005.

regulating livestock manure application on cropland in Manitoba. You may wish to refer to the documents presented during public consultations last winter. These documents remain available to the public on our website at: www.gov.mb.ca/conservation/regoperations/livestock/index.html.

Presently, as part of the permit issuance process for manure storage facilities, Manitoba Conservation reviews proposals for new and expanding livestock operations for their capacity to comply with upcoming regulatory amendments in regards to P. Livestock operations are being assessed on the operation's ability to manage P on a "2X crop P removal" basis. For the longer term, government is considering ways to ensure that, on a regional basis, manure P can be managed on a "1X crop P removal" basis.

Managing manure application rates on the basis of P content of manure is different than for manure N. A major point of distinction is that P in manure is not volatile and is not biodegradable. As a result, manure P remains relatively constant during storage and is not affected by the spreading method. The following are some tools producers can use to estimate the amount of manure P they have to manage on their operation. This estimate is the key for assessing the land base required for managing manure on the basis of P produced by their livestock.

Feed Consumption & Feeding Strategy Models

Use a Feed Consumption Model to estimate the output of N and P from your operation. This model takes into account the variety of feed ingredients used in your operation, the change in your nutritional program, as well as the implementation of new feeding strategies. This estimation is site-specific to your farm (it is not a general book-value). Table 1 shows the estimated N and P annual output for pigs.

The data sheet for the Feed Consumption Model is now available on our website at: www.gov.mb.ca/conservation/regoperations/livestock/index.html. If you wish to have a report sent to you estimating your total output of N and P, as well as new strategies to reduce nutrients produced, fill out the form and send it by fax to: Marc Trudelle, agr., M.Sc., P.Ag., (204) 948-2420,.

Table 1: Best Achievable N and P Output per Marketed Pig.

Animal	Excretion (kg/hd) of nutrient	
	N	P_2O_5
Sow	18.0	12.3
Weanling	0.226	0.117
Grower/finisher	2.69	1.47

N & P reduction strategy: begins at the source!

A very important aspect of manure P management starts with a proper review of P supplements added to livestock feed rations. Over the years, the practice has been, in the livestock industry, to ensure that feed rations would not be deficient in P by adding more P to the feed than the minimum levels necessary for the livestock dietary needs. This practice will increase manure P levels. A review of feed P supplements will help many producers to immediately and effortlessly reduce manure P levels while also saving on feed costs.

Some livestock species cannot digest the P bound to plant material representing the bulk of their feed rations, as phytate tightly binds P in plant fibers. This is particularly the case for monogastric species such as poultry and swine. The addition of phytase enzyme to the feed ration of such livestock will degrade the phytate and allow the release and use by animals of plant bound P. Table 2 shows the potential decrease in N and P output for pigs by using different feeding strategies.

Managing manure nutrients is not an exact science. Underestimating the N and P content of the manure will eventually result in elevated soil nitrate and P levels. Overestimating the nutrient content of the manure may unduly limit crop production. While average nutrient content values are available from other sources, the values may not accurately reflect your feeding strategies and efficiency.

Moreover, due to the variability in manure, a single manure nutrient analysis can be unreliable. In order to get an estimate of the nutrient variability within a single cell storage structure or a circular tank (concrete or steel), several samples should be taken while the storage is being emptied, including samples from the top, middle and bottom of the storage. These samples should be sent separately to the lab for analysis. In the case of a two-cell earthen manure storage structure, several samples should be taken while the storage is being emptied, and samples from the first cell, the mixture of cell 1 and 2, and the second cell is sent separately to the lab for analysis. The corresponding volume for each sample should also be recorded. The Feed Consumption Model will help to validate your manure analysis.

Table 2: The Effect of Feeding Strategies on Nitrogen and Phosphorus Output for Pigs.

Feeding Strategy	Decrease in Nutrient Excretion	
	N (%)	P (%)
Phytase	2	25-35
Amino acid (Lysine, Threonine, Methionine)	8-18	n/a
Multi-phase feeding	10-22	10-22

Nutrient Balance

The second approach is to estimate the use of commercial fertilizer on your farm, the import of other manure or biosolids (municipal or industrial

Who are you going to call?

Manure management plan questions should be directed to Headquarters. Matters regarding all other aspects of the *Livestock Manure and Mortalities Regulation* should be directed to the Regional contacts. For reporting a spill, emergency spreading, or any emergencies, call your Regional contact. After hours, use the emergency response number.

EMERGENCY RESPONSE 944-4888	
MMP	**Environmental Programs** Ph: 945-3078 Winnipeg Or 945-3789 Fax: 948-2420
Regional Contacts Manitoba Conservation	**Interlake** Ph: 642-6095 Gimli **Eastern** Ph: 345-1447 Lac Du Bonnet **Red River** Ph: 346-6068 Steinbach Ph: 945-5305 Winnipeg **Western** Ph: 726-6064 Brandon

sludge), the availability of land, and their corresponding soil test values.

Manure Treatment

The implementation of a manure treatment system on your farm will require the aforementioned information as well as an agronomic, economic and financial analysis for the project. An evaluation of a manure treatment system will require the following technical information:

- the total output of N and P by your operation
- the land capacity to receive P (from all sources)
- the efficiency of P extraction (by the system)
- an economic evaluation (fixed and operational costs)
- a financial analysis (can the farm support the system)

Manitoba Conservation can help to establish a schedule that helps ensure operators are taking concrete actions to move forward and are actively planning to come into compliance. For more information, contact: Marc Trudelle, agr., M.Sc., P.Ag., at telephone number (204) 945-3789.

Mortality Disposal: have you considered…?

Barn fires, electrical shortages and other events may result in greater than normal mortalities. Regular disposal methods may not be adequate for disposal of mass mortalities. Incineration may be a challenge due to the volume and rendering facilities that do not normally accept animals that have been killed in a fire etc. Therefore, it is necessary that producers develop a contingency plan in case of a mass mortality event.

Emergency disposal of mass livestock mortalities must be in accordance with the LMMMR. The regulation provides approved methods of disposal where environmental conditions are suitable (i.e. does not cause pollution to surface water, groundwater, or soil), and setback requirements, provided that it is done in a manner acceptable to the Director.

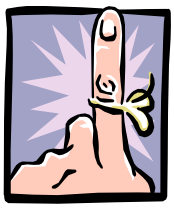
The LMMMR requires that the operator report the situation and provide information to an Environment Officer in the case of a mass mortality event. It also requires that the mortalities are disposed of according to the Director's or Environment Officer's instructions.

Please visit our website (www.gov.mb.ca/conservation/regope rations/livestock) for the complete Livestock Manure and Mortalities Management Regulation. The website also contains information bulletins and guidelines including information on composting and burial.

Important Dates

October 31st - last date for construction of manure storage facilities and confined livestock areas. Under exceptional circumstances, Manitoba may authorize construction work to proceed after that date.

November 10 – prohibition of winter spreading of manure begins. Applies to all livestock operations that came on stream since 2004. Small operations (less than 300 animal units) in existence in *March* 2004 can still land apply manure in the winter; operations housing between 300 and 400 animal units have until 2010 to secure enough storage capacity to cease winter manure application.



Don't Forget!!

1. *Spreading before April 10 is considered winter spreading. Large setbacks from surface water, wells, etc. are required. Only existing operations less than 300 AU and some that are between 300 and 400 AU are allowed to winter spread.*
2. *Be sure to submit your soil tests to Manitoba Conservation before spreading manure.*
3. *Direct discharge of manure from spread fields is prohibited: stay away from watercourses!*
4. *Source water sample results must be submitted to Manitoba Conservation annually prior to December 31.*
5. *Applications for registration of non-permitted storages should already be in to your regional office.*