

Agri-Environment Bulletin

November/December 2013

A newsletter from Manitoba Agriculture, Food and Rural Development

New Manure Regulations for 2013

Ban on winter application of manure

All livestock operations, regardless of size or species of animals, are banned by government regulation from applying manure in the winter starting November 10, 2013. The ban is in force between November 10 and April 10 every winter. Manure means livestock feces and urine and any water contaminated with feces or urine, wasted feed, bedding or soil. The ban also includes winter application of milk house wash water and composted manure.

To comply with the ban, producers must have enough capacity in their manure storage to hold liquid and semi-solid manure between November 10 and April 10. Solid manure can be stored in fields, as long as it does not pollute surface water. Solid manure stored in fields must be removed and applied to the land, after April 10. A crop must be grown on the site where the manure was stored, before the site can be used to store manure again.



Phosphorus Thresholds

Livestock operations must also comply with regulatory phosphorus (P) thresholds. Operations located within the Rural Municipalities of Hanover or La Broquerie and those operations outside of these Rural Municipalities that submitted a plan

requesting an extension to Manitoba Conservation and Water Stewardship in 2008 have until November 10, 2013 to comply.

<u>Soil Test P Threshold (Olsen P)</u>	<u>Manure P₂O₅ Application</u>
0-59 ppm	Manure can be applied based on N requirements of the crop
60-119 ppm	No more than 2x crop removal of P ₂ O ₅ can be applied *
120-179 ppm	No more than 1x removal of P ₂ O ₅ can be applied
Over 180 ppm	No manure application without written consent from the Director of Environmental Programs and Strategies (Manitoba Conservation and Water Stewardship)

* A one-time application of up to five years worth of P (5x crop removal of P₂O₅) can be applied provided the field receives no additional P for the following four years or until soil test P levels return to the levels immediately before the manure application and the annual manure application rate does not exceed the annual N requirement of the crop.



What agri-environmental news is important to you?
Email agrienv@gov.mb.ca with your ideas and suggestions for future articles.

Anaerobic Digestion Project

Anaerobic digestion (AD) is a treatment process that allows micro-organisms to break down organic materials without oxygen. The end products are biogas made up mainly of methane (CH₄) and carbon dioxide (CO₂) gases and treated manure, which contains nutrients that may be more readily available for crop uptake. The biogas can be flared off, used as a heating source or converted to electricity.

Sweetridge Farms in Winkler, Manitoba, has approximately 230 head of dairy cattle and has been selected to demonstrate the anaerobic digestion process in order to implement the biogas component of Manitoba Hydro's Bioenergy Optimization Program. The biogas system was installed by PlanET Biogas Solutions, based in St. Catherine's, Ontario. The digester is composed of a completely mixed concrete tank system with a double flexible rubber membrane to contain the gas as it is produced (Figure 1).

The Sweetridge Farms digester will only digest manure, but there is a possibility the project may be expanded to include other local waste options (ex: potato waste). Because methane makes up a large amount of the biogas, it will be piped to a reciprocating engine-genset to generate between 50 kilowatts (manure only) and 72 kilowatts (with other wastes included) of electricity. Heat from the engine will be used to heat the digester and the excess heat will be used on the farm.

A solid-liquid separator has also been installed on the farm to separate solids from the digested product stream. These solids will be tested as a replacement for straw bedding in Sweetridge's dairy barns. Further research will be done on what happens to the nutrients within the system. The construction of the AD system is completed and commissioning will begin in November 2013.

For details on this project, contact Van Doan with MAFRD at 204-792-0740.

The core biogas system was funded by Manitoba Hydro and the Government of Canada's Clean Energy Fund. Project enhancements will be funded by Manitoba Agriculture, Food and Rural Development, the Prairie Agriculture Machinery Institute and the University of Manitoba's Biosystems Engineering Department.



Figure 1. Anaerobic digester with solid digestate storage

Important Dates and Notices

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| November 10 | Ban on winter application of manure takes full effect (no exemptions) |
| November 10 | No further application of nitrogen and phosphorus fertilizers is permitted until April 10 of next year |
| November 15 | Crop residue burning restriction lifted. |
| December 2 & 3 | <u>Manitoba Conservation District Association Conference</u> in Brandon. |

- Contact your local MAFRI office to sign up for an Environmental Farm Plan Workshop.
- A free composting webinar is held the first Wednesday of each month. Please contact van.doan@gov.mb.ca for more information.