Inside this issue:

- Early Application of Manure
- Early Application of Manure
- MNDOT Permits for Manure Pumping

Time to Re-Register your Feedlots

Dodge County requires that every feedlot & pasture operation register on a yearly basis. Attached in the feedlot flyer is the 2014 feedlot registration. Remember that if you register for 30 Animal Units or more or 10 Animal Units or more in "shoreland" (within 300' of DNR protected waters), a $25 fee should accompany the registration sheet.

Know Your Sensitive Area Setbacks when Applying Manure this Winter!!

With winter fast approaching, the challenge of hauling manure properly in the fields will be coming. Below (Table 3) are the setbacks for sensitive features that many farmers/custom applicators might run into this winter when hauling manure. It list the setbacks based on the season and method of manure application. Please take extra care when applying manure near sensitive areas. A simple rule of thumb for applying manure in the winter: The setbacks from sensitive features is always 300 feet when you can't incorporate the manure within 24 hours.

Table 3. Minimum manure application setbacks (in feet) near sensitive features

<table>
<thead>
<tr>
<th>Winter frozen or snow-covered soils</th>
<th>Non-Winter with immediate incorporation (&lt;24 hours)</th>
<th>Non-Winter not incorporated within 24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter</td>
<td>With phos. mgmt.</td>
<td>No phos. mgmt.</td>
</tr>
<tr>
<td>Lake, stream</td>
<td>300</td>
<td>25</td>
</tr>
<tr>
<td>Intermittent stream, DNR</td>
<td>300</td>
<td>25</td>
</tr>
<tr>
<td>protected wetland, drainage ditch w/o berms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open tile intake</td>
<td>300</td>
<td>0</td>
</tr>
<tr>
<td>Well, mine or quarry</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Sinkhole with no diversion berm</td>
<td>Downslope 50' / Upslope 300'</td>
<td>50</td>
</tr>
</tbody>
</table>

*Intermittent streams and ditches pertain to those identified on United States Geological Survey (U.S.G.S.) quadrangle maps, excluding drainage ditches with berms that protect from runoff into the ditch and segments of intermittent streams which are grassed waterways.

(Source: MPCA's Land Application of Manure Fact Sheet)
Considerations for Early Winter Applications of Manure

Farms with livestock have the unique advantage of producing a valuable by-product, manure, which has many of the nutrients required for crop production. However, in order for these nutrients to be available to support crop growth, manure has to be applied with consideration for timing, method, and rate. While all these factors are important, properly timing manure application is critical to reducing nutrient loss from fields.

Data gathered by UW Discovery Farms shows that when manure is applied one week or less before a runoff event, the losses of nitrogen and phosphorus are significantly increased even with relatively low application rates. When manure applications are made several weeks or months before runoff occurs, nutrient losses can be reduced by as much as 50 to 75 percent. Understanding the conditions that increase the risk of nutrient loss can help farmers better manage manure throughout the year.

Spreading manure in the winter has unique challenges. Weather conditions that greatly increase the risk of loss include: the presence of concrete frost, development of an ice crust on the soil surface, and the amount and condition of the snow cover. In the late fall and early winter (October - December) in Wisconsin, fields are often harvested and may be frozen. However, there typically is not significant snow cover, concrete frost, or ice crusted soil that is common in late winter. Manure applied during the time period before these conditions develop has a lower chance of losing nutrients through surface runoff than applications made later in the winter (February - March).

Management recommendations for this time period. Farmers with manure storage capacity of three months or more should use the early winter period to make sure that the storage is empty enough to prevent a ‘must spread’ situation until early April. Farms with limited or no storage should use the early winter period to spread on riskier fields on the farm and save the less risky fields for the later winter, and high runoff, months of February and March. Regardless of whether your farm has storage or not, having a manure spreading plan that outlines the most and least risky fields is important for all periods of the year.

Concrete frost. “Concrete frost” is commonly used to describe a condition when most of the pore space in the surface of the soil is occupied by frozen water. During conditions when snow melts or rain falls in the winter, the water on the soil surface begins to infiltrate the soil and then is frozen when it reaches the frost layer below. In some situations, the upper profile of the soil becomes nearly saturated with water which freezes during the night when temperatures drop below freezing.

Concrete frost decreases the soil’s ability to infiltrate water and nutrients or bind with applied manure (the soil is less porous - like concrete). It takes higher temperatures and a longer time to thaw concrete frost compared to frost formed in unsaturated soils. Weather patterns including multiple thaws with melting snow or winter rain events result in substantial development of concrete frost throughout Wisconsin.

Source: UW Discovery Farms

Continued Page 3
Considerations for Early Winter Applications of Manure

Ice crust. While concrete frost can form under a snowpack or on bare soil, ice crusts are formed when rain falls on soils that are very cold. Most commonly, we see crusts develop when rain falls on soils without snow cover. Ice crusts over an inch thick have been observed, but any thickness of ice prevents proper contact of manure to the soil. November 2013

Amount and condition of snow cover. There are two important factors to consider when evaluating the risk of manure applied on snow. First, take a look at how much snow is present. If there is more than 6-12 inches in the area you are planning to spread, the manure will not be able to come into contact with the soil. UW Discovery Farms data has shown that manure applied on top of a few inches of snow, especially in the early winter months, does not typically increase the risk of nutrient loss. This is because the manure achieves good soil contact and nutrients can attach to the soil as the sun radiates heat on the dark manure, slowly melting the snow. As the wintertime months progress and the snowpack becomes more dense or concrete frost develops in the soil, the potential for nutrient loss increases. In general, less snow on an area means a better chance for manure to bind with soil and stay in the field when runoff events happen later in the season.

Snow depth is not always a good indicator of the amount of water in the snowpack. During the early winter months, the snow is often light, easily blown around, and not densely packed. On the other hand, the snowpack in late winter or early spring has often undergone some thawing cycles and is typically more dense. A manure application on a few inches of light snow is less risky than the same application on a dense snow pack or slush. Manure applied on dense snow pack or slush has very little chance of binding with the soil before runoff occurs.

Concerns with winter spreading can be addressed if farmers understand the risks associated with varying soil conditions and consider weather forecasts prior to spreading on frozen ground. Spreading just before snowmelt or a winter rain event significantly increases the risk of manure and nutrient movement. Manure applications should also be avoided on deep and/or dense snowpack or if concrete frost or ice crusting of the soil is evident. This is not always possible, so applications made during these conditions should be done on internally drained fields (closed depressions) or low sloped (flat) fields to minimize the potential for loss. The key to reducing nutrient loss during winter manure application is to understand the local conditions and have a winter spreading plan in place.

For more information, visit UW Discovery Farms website: http://www.uwdiscoveryfarms.org/OurResearch/ManureManagementConsiderations/FrozenGround.aspx

Resources (available on UW Discovery Farms website):
Riechers Beef 7. Manure Applications on Frozen and/or Snow Covered Ground

Source: UW Discovery Farms
Remember to get a Permit from MNDOT if you pump manure under a State Highway

When pumping manure next spring or fall remember if you plan to pump manure under a state highway make sure you call MNDOT. MNDOT requires that you obtain a permit from MNDOT before you can pump manure under state highways. The permit can be fill out online and you need to notify MNDOT two days prior to pumping so that an inspecting official can view the setup before approving the permit. In some cases MNDOT requires that a $2000 dollar deposit be placed before the permit will be approved. This deposit is for possible clean up cost, if necessary, and is returned to the applicator after pumping is complete with no incidents. Below is the online permit application.


MNDOT Contact for Dodge County
Terry Condon — 507-446-5505 - Office & 507-456-5347 - Cell