

MANURE ON FROZEN & SNOW-COVERED GROUND

A REPORT TO THE GOVERNOR AND GENERAL ASSEMBLY

FEBRUARY 15, 2012



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IOWA DEPARTMENT OF NATURAL RESOURCES

This report fulfills the requirements of Code of Iowa Sections 459.313B Application of
Liquid Manure on Snow-Covered Ground or Frozen Ground – Annual Report

Background

In 2009, the General Assembly passed legislation that limits the surface application of liquid manure from confinement feeding operations during the winter. This legislation was designed to address the surface runoff and water pollution problems that may occur when manure is surface applied on frozen or snow-covered ground.

Those water quality problems are most prevalent during late winter application. For that reason, the legislation purposely restricted surface manure application except in emergency situations. Specifically, those confinements large enough to require a manure management plan (more than 500 animal units) are prohibited from surface applying if the manure cannot be injected or incorporated, from:

Dec. 21 to April 1 on snow-covered ground, and
Feb. 1 to April 1 if the ground is frozen.

The legislation leaves a window of opportunity for producers to surface apply manure early in the winter, or at any time the ground is not snow-covered or frozen. The limits on late winter application also encourage producers to plan for manure management, resulting in more nutrient uptake and better water quality.

The General Assembly defined what constitutes an emergency and explicitly stated that the failure to properly account for the volume to be stored is not an emergency. The law gave several examples of emergencies indicating they would be limited to infrequent events that could generally not be avoided such as a natural disaster, unusual weather conditions, or equipment or structural failure.

In 2010, producers who were concerned about having inadequate manure storage, and consequently having to apply manure during the winter, asked the Environmental Protection Commission for more time to improve their storage capacity. In the final adoption of rules, commissioners approved giving confinement producers with inadequate storage an extension to do emergency application through the 2014-2015 winter. This gave producers additional time to make decisions and make appropriate changes to their operations.

Producers who anticipate needing emergency land application are required to identify suitable fields in their manure management plans (MMPs). The law places additional restrictions on land application such as defining the types of fields where application would be allowed and protecting tile intakes. Starting Dec. 21, 2009, producers began notifying the appropriate DNR regional field office prior to application.

Requests for Emergency Application

Most of the state had nearly ideal weather conditions for manure application following harvest in the fall of 2011 and well into 2012. Dry weather and no snow meant most producers had many weeks to empty manure storage structures and land apply manure, making requests for emergency application after Dec. 21 unlikely. That proved true, and

by Feb. 15, 2012, the DNR had received zero requests for emergency surface application from producers affected by the law. This compares with nine requests from producers who lacked sufficient storage during the winter of 2010-2011. And it compares with 43 in the winter of 2009-2010 when a wet fall and early snowfalls limited after-harvest manure application.

An additional four producers contacted field offices with concerns about winter manure application in 2012. None of these was required to report emergency application on snow-covered or frozen ground. Most were open feedlots or had dry manure, so they are not required to abstain from or report emergency manure application on frozen or snow-covered ground. Field staff assisted these producers in identifying safe areas for land application.

Table 1: Number of Requests for Emergency Application by DNR Field Office Area

Region of State	Number of Requests		
	Winter 2009-2010	Winter 2010-2011	Winter 2011-2012
Northeast	7	5	0
North central	5	2	0
Northwest	11	1	0
Southwest	8	0	0
South central	9	1	0
Southeast	3	0	0
Total	43	9	0

As inquiries come into field offices, DNR staff and producers work together to decide on options for land application, the requirements for fields eligible for emergency surface application and the risks of surface runoff and water pollution when applying during late winter to frozen or snow-covered ground. Together, staff and producers sort through and identify the best possible sites to surface apply manure.

Complaints

It's clear that confinements needing an MMP are not the only type of facility that poses a potential risk to surface water quality as snow melt and thawing occur. Other types of livestock and poultry facilities can also cause runoff or pollution issues. Complaints concerning manure application on snow-covered or frozen ground are included in the four non-emergency applications reported to the DNR and mentioned above.

In past years almost 78 percent of the complaints reported to the DNR about manure application on snow-covered or frozen ground concern producers not regulated under this law. In 2009-2010, nearly half (45 percent) of complaints about winter manure application were about small animal feeding operations (confinements that are not regulated under this law). During the 2010-2011 winter, less than 22 percent of complaints concerned regulated confinements spreading liquid manure.

The four reports received this winter were about solid manure or manure originating from open feedlots. From the producer and complainants' viewpoints, problems occur at all types of facilities, not just larger confinement feeding operations.

Follow-up and Implications

There are currently 5,666 confinement feeding operations in the state with an animal unit capacity of 500 or more. Confinements of this size are required to notify the DNR and have approval before building, modifying or expanding. They are also required to have manure management plans and use a certified manure applicator. Each facility is required to keep records of manure application and plan changes, submit annual plan updates to the DNR, and take soil fertility tests at least once every four years. If they handle liquid manure, the same facilities are required to limit liquid manure application on frozen or snow-covered ground.

Obviously weather plays a large role in how well confinement facilities can comply with state law on winter manure application – the warmer and drier the weather, and the later it freezes or snows, the easier it is to complete manure application in the fall or early winter. However, producers also have a responsibility to have adequate manure storage or to consider alternative ways to store or transport manure if there is an early freeze or snow fall. Several confinements added manure storage structures recently – seven in 2010 and five in 2011 – indicating producers want to ensure they have adequate manure storage.

Good weather, good management and additional storage have successfully prevented manure spills this winter.

Trends in construction of animal confinements indicate many new facilities are planned for construction or expansion in the coming year. (See Table 2 below.)

Table 2: New Construction Applications Received 2006 to 2011

New Construction 2011	2011 Totals	2010 Totals	2009 Totals	2008 Totals	2007 Totals	2006 Totals
Permitted Hogs (new)	9	2	5	98	125	172
Permitted Hogs (expansions)	66	16	20	96	117	99
Permitted Poultry	2	3	5	9	2	3
Permitted Open Cattle lots	11	5	7	13	7	33
Permitted Confined Beef Cattle	14	3	2	5	9	5
Permitted Confined Dairy Cattle	4	2	8	9	5	4
Permitted Combined Operation	8	14	11	NA	NA	NA
Totals	114	45	58	230	265	316

The increase in construction permit applications for permitted facilities were up again in 2011, and the number of applications coming in 2012 has already exceeded the number

received at this same time in 2011. The DNR has reallocated field time to assist with review of the construction permits.

Iowa's animal producers are taking the requirements for winter application seriously. The combination of good management and a mild winter has kept the nutrient value of the manure on the field where it can be used for this year's crop. In addition, producers are continuing to increase their storage capacities to reduce the likelihood of having to apply manure during the winter season.