

IMMAG - Iowa Manure Management Action Group

A Top Ten List: Preparing for Fall Manure Application

Angela Rieck-Hinz, Shawn Shouse and Greg Brenneman Iowa State University

1. Follow Your Manure Management Plan. Prior to land application, review your manure, nutrient, or comprehensive nutrient management plan, and make any necessary updates such as adding new fields. Review the plan, application methods and separation distances with employees and/or commercial manure applicators. Don't forget the recordkeeping requirements associated with your plan. Also consider evaluating fields for application. Because winter application of manure is prohibited for confinement feeding operations with liquid manure, plan ahead in the event you may have to apply manure under emergency situations in the winter. Save fields with the flattest slopes and P-Index ratings of 2 or less for emergency application.

2. Know and Follow Land Application Separation Distances. Confinement site operators are subject to land application separation distances to neighbors and public use areas, but all animal feeding operations, regardless of size, are subject to separation distances from designated areas (water sources). Get a copy of an aerial photograph of all fields to which you apply manure. Map out neighbors' houses, churches, businesses, schools, cemeteries and other public use areas as well as all designated areas such as sinkholes, wells, including abandoned wells, cisterns, designated wetlands, water sources, high quality water resources, ag drainage wells, and tile inlets to ag drainage wells. Identify all other sources of concern for manure application. Sketch out separation distances. Train your employees to read the maps and stay away from areas where manure is not allowed to be applied. If needed, flag out the areas in the field. Share copies of the maps with your commercial applicator. Make sure you understand the definitions for incorporated and injected manure. Make sure you understand separation distance exceptions for designated areas (water sources) that must have the manure injected or incorporated on the same date it was applied. For more information see DNR 113 [Separation Distances for Land Application of Manure](#) and DNR 117 [High Quality Water Resources](#).

3. Maintain Your Manure Applicator Certification. If you are required by law to be certified to handle, haul, transport or land-apply manure, make sure your certification status is current. Contact your [ISU County Extension Office](#) to schedule an appointment to attend training. For more information see ISU's Manure Applicator Certification Web Page at: <http://www.agronext.iastate.edu/immag/mac.html>. If you are not sure of your current applicator certification status, please contact the DNR Licensing Bureau at 515-281-5918.

4. Develop an Emergency Action Plan. Manure spills happen, so plan accordingly. Train employees in manure spill response. Ask your commercial manure applicator if they have a plan of action in the event of a spill. If they don't have a plan, demand it. Keep important phone numbers and contact information for excavators, neighbors with pumps and tractors, and local officials and emergency response units up-to-date and posted where everyone knows where to find them. Remember to contact DNR if a manure spill or release does

happen. You must report any spills or releases within six hours. Call the 24-hour spill hotline at 515-281-8694.

[PM 1859 Emergency Action Plans](#)

[IPPA's Emergency Action Planning](#)

[Iowa Farm*A*Syst Assessing Your Emergency Response Planning for Manure Spills](#)

5. Take Manure Samples and Update Soil Samples. We are seeing manure samples that vary quite drastically from farm to farm based on differing inputs. Using a book value for determining land application rates, while still allowed for MMPs, is not very practical. Taking manure samples prior to land application will give you nutrient analysis results for planning application rates this fall. Sampling during land application or manure agitation may provide better results to use in future planning, but will not provide nutrient analysis results to use in planning application rates for this fall. A history of nutrient analyses from manure sampling will help you better manage the nutrients in manure for crop production. For more information, see [PM 1558 How to Sample Manure for Nutrient Analysis](#).

Will you need to update your MMP in the next year and need new soil samples to re-calculate your P-index? If so, taking the required soil samples this fall will keep you from getting caught needing to update the MMP at a time when you can't get soil samples taken. Samples should be taken prior to manure application. For most MMPs, one soil sample can't represent more than 10 acres. If you are updating an existing P-index and have been applying manure at less than the P removal rate of the crop, then one soil sample can represent up to 20 acres.

6. Calibrate your Application Equipment. When the co-op applies fertilizer for crop production do they know how much they are spreading? Yes! Why not do the same for your manure nutrient source? Calibrating manure application equipment takes a little time, but in the long run it will help you meet the correct application rate and make better use of your manure nutrients. Available resources include PM 1948 [Calibrating Liquid Tank Manure Applicators](#) and PM 1941 [Calibration and Uniformity of Solid Manure Spreaders](#).

7. Apply at Appropriate and Legal Times. A new law has been passed prohibiting the application of liquid manure from confinement facilities on snow-covered or frozen ground during certain times of the year. However, regardless of the source of manure, or the size of operation, application of manure under these conditions is not recommended due to the increased risk of nutrient loss and movement to surface waters. [IMMS Vol. 3 Winter Manure Application](#). Plan in advance to avoid winter application of manure.

8. Consider the Neighbors. There is no doubt about it, the number one complaint about manure application is the odor. Right or wrong, there is a perception that "if I can smell it, someone must be doing something wrong." Work with your neighbors to let them know about your manure application plans. If possible, tell them how long it might take, how you

plan to apply the manure, and how long they might expect to smell the manure. Inquire about any outdoor events in the neighborhood such as weddings, Friday night football games, cookouts and such to avoid manure application prior to those events. Good communication is the key.

9. Be Safe. Fall is a busy time of year for farmers and commercial manure applicators. The last three falls in Iowa have been really short seasons of work due to long rainy periods, early snowfall and the ground freezing earlier than normal. Many manure spills happen because people are in a hurry or are tired from long hours of application work. Get plenty of rest, take breaks and slow down. Take time to inspect equipment. This will help protect employees and reduce the chances of equipment malfunction. Observe all laws of the road and watch out for the “other driver”. They may not realize you are moving at a much slower rate of speed or how long your tractor and tank wagon are when they attempt to pass you on the road. Check “slow moving vehicle signs” and replace as needed. Check lights to make sure they are working and are visible. Install additional lights as needed to improve your visibility and to help people see you.

10. Manure Pit Safety. Be aware of safety issues regarding gases when pumping and agitating manure. **NEVER** enter a building or manure storage when pumping or agitating manure. Use hang tags, or lock-out tags to prevent people from entering a facility during agitation and pumping. With the increased incidences of foaming manure pits, caution should be exercised when pumping from foaming pits. Recommendations include: pumping pits when barns are empty, extinguishing all non-ventilation ignition sources, do not agitate the pit until the foam level is 2 feet below the slats, increase ventilation, no smoking in or around buildings. See the following resources for safety measures around foaming pits.

[Ventilate and take other safety measures to prevent pit explosions](#)

[Safety measures to prevent manure pit explosion](#)

Angela Rieck-Hinz is an extension program specialist for Iowa State University Extension and is the coordinator of the [Iowa Manure Management Action Group \(IMMAG\)](#). You can read more about manure management issues by visiting the [IMMAG Web Page](#).

Shawn Shouse and Greg Brenneman are Extension Agricultural Engineers serving counties in southwest and southeast Iowa.