



March 2020

Manure Applicator Certification Update

Due to the Corona virus/COVID-19 outbreak, the Manure Applicator Certification Training held in your county extension office are unavailable until further notice. Please use the [DNR Manure Applicator Certification E-Learning site](#) to renew your certification or to get your initial certification.

To take the education course online, applicators will need to register for an IowaID. This can be done by clicking on the E-Learning link above and following the prompts. Applicators can pay certification fees online or mail them to the DNR at

Iowa Department of Natural Resources
Manure Applicator Certification
502 E 9th St
Des Moines IA 50319-0034

Manure Agitation Tips for Hydrogen Sulfide Safety

Hydrogen sulfide gas continues to be a serious issue both in and around barns with liquid manure storages. The decomposition of organic matter in manure results in the release of several gases: ammonia, carbon

dioxide, methane, and hydrogen sulfide among them. Most of the time, these gases are emitted slowly, but any time manure is being agitated, pumped, or the surface is disturbed, hydrogen sulfide can be rapidly released. Although all are potentially dangerous, hydrogen sulfide tends to be the one of most concerning in these cases. Hydrogen sulfide has an intense rotten egg smell, so it is relatively easy to detect its presence, even in very low concentrations. However, since we can smell it at such low levels, there is not a clear indication of when it reaches a potentially hazardous conditions that we can detect without the use of analytical instruments.

Hydrogen sulfide can spike quickly and without warning during pit pumping.

People should NEVER enter a building or facility while agitation is occurring. Use yellow caution tape to mark barn entrances and alter everyone that manure agitation and pumping is occurring. Consider [lockout tags](#) during pumping.

If possible, remove animals before pumping. For barns with multiple pits, move the animals out of the room with the pit being agitated to reduce risk.

Agitation Strategy

- Do not agitate until the manure level is 1 ½- to 2 feet below the slats.
- Hydrogen sulfide is denser than air and as a result, will tend to pool on the manure surface. Sufficient separation is required to minimize hydrogen sulfide in the animal breathing zone.
- Avoid aggressive agitation when animals are in the building (no rooster tailing).
- Surface agitation causes more turbulence and greatly increases the release of hydrogen sulfide.
- Do not direct agitator nozzles toward pillars, walls, or towards a corner.

- Pillars and walls stop flow quickly and cause the manure to churn, increasing the rate hydrogen sulfide is off gassed from the manure.
- Corners are often dead air zones; releases of hydrogen sulfide in this area are more likely to result in animal loss.
- Stop agitating when bottom nozzle is less than 6" below the manure surface.
- Keep the agitation below the surface at all times.
- Avoid sudden changes in agitator depth and intensity.
- Quick changes can result in large amounts of solids that have not previously been agitated and result in rapid gas release.
- Slower changes in both power, flow direction, and depth, allow slower, more continuous release that is safer for animals and workers.

More information about manure agitation can be found in the publication, [Hydrogen Sulfide Safety – Manure Agitation](#).



Figure 1: Waiting until animals are out of the barn before manure agitation is a best management practice.

Spring Rain and Barnyard Runoff Tips

Spring in Iowa brings planting, calving, and wet weather. Early spring rains can cause challenging conditions for manure management. This is the time of year to spend some time assessing your farmstead and take some simple steps to make sure your barnyard water management practices are operating as they should.

Take some time and help do your part to protect Iowa's waters. Perform a visual inspection of your farm, paying close attention to the cow yard, feedlot, manure storage structures, manure stockpiles, and feed storage areas. This practice ensures everything is in working order and could help you identify any problem areas that could impact water quality.

To assist with your self-assessment, tools are available to help you understand what to look for while surveying your farm. A great place to start is with [What to Expect When DNR Inspects](#), which outlines what the Iowa DNR is looking for when reviewing a facility.

To reduce nutrient movement, implement best management practices including:

- Utilize clean water diversions and gutters for roofs to prevent clean water from coming in contact with areas where it could become contaminated.
- Scrape open lots frequently to reduce what rain can move and also make sure drainage is towards control structure.
- Select flat areas away from water pools or channels to locate stockpiles and compost piles to prevent runoff.
- Keep feedstuffs dry.
- Promptly clean-up spilled manure, feed, silage, and bedding.



Figure 2: Use gutters to prevent clean water from entering your open lot.

Events

April 17, 1:30 pm

[Precision Technologies for Managing Manure
Webinar](#)