July – September Edition

Management Solutions

Agronomic Solutions, LLC

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This is a seasonal publication produced by Agronomic Solutions, LLC for the confined feeding operators. Issues and information addressed in the newsletter will be geared towards animal feeding operation owners and managers. Hopefully you will find its contents useful in your operations. (260) 593-2092

Update on Noble County AFO Changes

In the Spring issue of our newsletter we outlined some of the changes that affect Confined Feeding Operations in Noble County. We stated that the definition of Confined Feeding was changed to match IDEM's definition for total animals and what setbacks are required.

A Confined Feeding Operation must get an IDEM Permit and have setbacks of 250' on all sides and they must also get rezoned as A3 with the county.

MAKE SURE that you FIRST get the rezoning completed before getting your IDEM Permit. If the rezoning does not go through with the county, the IDEM Permit will do you no good. Once the rezoning is completed then we can begin the work with IDEM. We don't want our clients spending the money involved in getting the IDEM Permit and then being stopped by the county.

LaGrange County Changes

LaGrange County still has new rules coming so keep watching for updates.

However, we have been advised that we must make a major change to the way we have always done Site Plans. All Site Plans require a surveyor's site map included. This means you must have a surveyor come and draw an exact map of your farm. This step cannot be skipped! We have a surveyor willing to work with our clients, or you may hire your own. Just make sure your surveyor gets their site map to us to include in the plan. The surveyor will send a separate bill from what we charge for a site plan.

***Important to know and remember**: it necessary to have your site plan maps accurate! It's IMPORTANT when we submit the plan, but also when you build!!! When you receive the initial site plan which has been submitted to county, REVIEW IT THUROUGHLY! If changes should be made, let us know immediately so we can correct the submitted plan. We will be glad to submit any changes that you might make. Also if you don't follow through with building according to the approved site plan (for example if you don't put in the manure storage as on the plan), you could have your construction halted (red tagged) and be fined.

Michigan Requirements and CAFO Permits

All liquid storage facilities in Michigan require an engineer's stamp on the design prints and as built as a MDA Siting requirement. Engineer stamped as built prints are also required for any new CAFO permitted construction.

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Value of Manure Current Book Values …

The charts below show the average manure value per acre.

Current Fertilizer Prices—August 1, 2014

28% Semi- prepay	560# N / ton	$313.60 / ton	$0.56 / # N
11-52-0	1040# P_2O_5 / ton	$624.00 / ton	$0.60 / # P_2O_5
0-0-60 Semi	1200# K_2O / ton	$432.00 / ton	$0.36 / # K_2O

Swine Grower Pit				Dairy Lagoon		
N	33	$18.48		N	2.1	$1.18
P	33	$19.80		P	9	$5.40
K	27	$9.72		K	9.3	$3.35
	Per 1000 gal	**$48.00**			Per 1000 gal	**$9.93**

4000 gal/A = $192.00/acre

12,000 gal/ A = $119.16/acre

Beef – Manure Pack				Litter - Broilers		
N	5.3	$2.97		N	23.4	$13.10
P	5.0	$3.00		P	30.9	$18.54
K	7.6	$2.74		K	24.3	$8.75
	Per ton	**$8.71**			Per ton	**$40.39**

25 ton/A = $217.75/acre

5.0 ton/A = $201.95/acre

Duck—Liquid		
N	17.6	$9.86
P	25.9	$15.54
K	19.3	$6.95
	Per 1000 gal	**$32.35**

5,000 gal/A = $161.75 acre

…now worth an average of $178.52 / acre

Importance of Good Sampling

Manure sampling is an important part of any farming operation. It is also important that the sample be a good sample.

If it tests hot (high) it should be retested to get a good sample. This is very important because hot rates will not only make your spreading records out of compliance, but you could also get a violation.

Another reason to ensure that you have a good sample is that the results must go in your spreading records.

Finally, if you have an IDEM or DEQ permit, you are required to have a manure sample once a year.

Evolution of Manure Injection

Manure has changed from being simply a waste to a very useful resource. With that change comes improvement of technology.

Dietrich injectors have an attachment available called closures, which is a double disc that covers the crack from injecting up.

The Nuhn Quad is a system that utilizes two tanks as opposed to one large tank. It has in-tank mixing, which provides a consistent spread.

Find the rest of the story on our Facebook page.

It's Cover Crop Time Again….

Its summer again, which means cover crops need to be planted again. Cover crops are a very beneficial to farm profitability and environmental stability, and should be considered an integral part of maintaining nutrients and improve soil quality. Cover crops targeted "hold captive" the nitrogen and other nutrients through the winter, while protecting against wind erosion.

Each cover crop has a special purpose, which should be considered before choosing which to plant. Legume cover crops are best to produce more nitrogen. Ryegrass cover crops (cereal rye or winter rye) increase soil organic matter, recycle excess nutrients, and reduce soil compaction. Brassica cover crops (oilseed radish) loosen soil, recycle nutrients, and suppress weeds. Choose which crop benefits you field most.

In most cases, cover crops should be planted as early as possible — around the end of August or first of September. Seeding rates for annual ryegrass are:

Drilled = 15lbs. per A Broadcast = 20 lbs. per A
Aerial = 25 lbs. per A

Soybeans and later applications should be drilled, in order to increase rates for later seeding. For more growth, increase the rate of seeding as competition makes taller plants. If aerial seeding, watch for drifting. Consider drilling the outsides of your field to reduce drift.

Oats are good if you seed them early are don't want to worry about killing them in the spring. Cereal rye is another good choice, especially when planted late in the season (i.e. mid to late October), and is easily applied with a dry spreader. Ryegrass is great to pasture; it works best when seeded early (July) after the wheat harvest, but may need to be spayed in November to kill it before it gets too big.

When selecting, ensure you choose winter hardy varieties of grass for our area. Bounty is outstanding in winter hardiness, rust resistance, and strong forage yield. It can root down to 5 feet after 3 years of use. Extensive rooting increases soil organic matter, water infiltration, erosion control, and captures any available N and P to hold for the following crops. Benefits multiply with multiple years of application.

Silage Leachate

Water quality is of high importance for all rural residents. Since drinking water is generally obtained through ground water sources, these ground water sources need to be protected from contamination at all costs.

Silage leachate is an organic liquid formed when water comes into contact with silage, or from pressure from the structure. It can be formed as a part of silage storage, especially if the ensiled forage is more than 70% moisture. It can also form when rain water comes into contact with the silage and carries nutrients with it.

Silage leachate has an extremely high BOD, or biochemical oxygen demand. This means it has a very high potential for oxygen consumption. If the leachate reaches surface water, oxygen will be consumed so quickly that anything alive in the water is immediately put at risk. As little as 1 gallon of leachate can lower the oxygen content of 10,000 gallons of river water to critical levels for fish survival. Silage leachate also has nutrients that harm groundwater, mainly being nitrate-nitrogen. Also the acidic nature of silage leachate can burn or kill vegetation in the area where it drains.

To prevent silage leachate, it must be properly harvested and stored. It can be captured by constructing lined ponds or collections bases, but these are costly measures. An alternative to this is making efforts to minimize silage leachate production. Harvesting at optimal moisture content, firm packing of silage materials, and maintaining proper feedout are just a few examples.

Don't let this come out of your silo.

Covering the silage is an important management practice. Covers preserve forage quality by minimizing airflow into the pile, and reduce leachate production by preventing rainfall from penetrating the silage and solubilizing nutrients. Covering a bunker preserves feed value and improves palatability and feed intake. Plastic covers should be applied so that rainwater and snowmelt is channeled off of the forage pile.

Leachate can be diverted to well-ventilated manure storage facilities or treated through the use of filter areas, absorption systems, constructed wetlands or vegetated leachate treatment areas. **CAUTION:** *Never mix silage effluent in enclosed tanks because silage effluent mixed with manure slurry will accelerate the release of hydrogen sulfide gas. Add seepage only to uncovered outdoor storages.*

Foaming Manure

As fall quickly comes upon us, so does the time to spread manure. The cooler temperatures and reduced ventilation rates in finishing facilities, there are increased risks with manure hauling; particularly when there is foam in manure pits. Severe burns, pig deaths, and building fires have been reported in recent years on farms where foam and methane have accumulated in manure pits.

As foam forms on manure, surface gases are captured in the bubbles. They may contain 60-70% methane. If the foam is disturbed through regular management activities such as manure agitation and/or pumping and power washing, large amounts of methane may be released into the air space above the slats. The released methane is easily ignited and may lead to barn explosions and flash fires. Possible precautions are:

- When hauling manure, do not enter and do not let employees enter the room being pumped. The risk is too great to allow for visual monitoring.
- Be extremely cautious when power washing rooms over foaming pits.
- Turn off heaters, pilot lights and non-ventilation electrical equipment in the room being pumped or power washed. Enforce no smoking rules.
- Open all air inlets slightly to reduce static pressure and prevent incoming ventilation air from short-circuiting through the pump out opening. Lowering static pressure also helps ensure the wall fans don't overpower the pit ventilation and draw pit gases up into the air space above the slats.

- Maximize ventilation during warmer weather.
- During cool weather, set the pit ventilation at its maximum level and run at least one wall fan (20 to 30 CFM per pig minimum).
- Continue to run pit ventilation while the room is empty between groups of pigs. Many of the flash fires reported happened while the barn was empty.
- If the pit is nearly full of manure or a combination of manure and foam, don't agitate until there is two to three feet of head space in the pit. Lack of head space reduces the effectiveness of the pit ventilation and allows gases to escape into the air space above the slats.
- Discharge all agitated manure under the manure surface. Do not shoot manure over the pit surface (rooster tail) and do not shoot manure against walls and pillars. As the pit empties shut down the agitation when the returning stream begins to disturb the manure surface.
- Allow the ventilation system to operate at increased levels for at least 30 minutes after disturbance to the foam has been complete.

EQIP 590 & 595 Checklists

Call me after your last nutrient application to get your 590 checklist signed. Then you can get your next EQIP payment.

For your 595 Pest Management Plan call me when you have completed the pest control requirements to sign that checklist.

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Caution on Wet Hay

Hay baled and stored at a moisture level that are higher than the recommended level could heat up and start a barn fire. If hay is baled without a preservative with a moisture content higher than 20%, you are at risk. It doesn't necessarily occur quickly either, it may take a month. Stored hay temperature should be monitored, and the local fire department should be notified if it builds to dangerous levels.

If hay is not given time to dry and is stored prematurely, heat-tolerant microorganisms develop, raising the temperature. When the temperature is 150 degrees Fahrenheit, it is in a dangerous temperature zone. Steps should be taken to decrease the temperature, such as taking the stacked hay apart to allow more air movement to cool heated bales. Once 200 degrees Fahrenheit is reached, a fire is very likely.

To dry hay faster, lay the cut forage in a wide swath with a mower-conditioner. Hay cut in a wide swath is exposed to more sunlight and dries faster. The conditioner crimps the stems of newly cut hay and allows moisture to escape at a faster rate.

From: ag.purdue.edu/aganswers

Dates to Remember ...

Aug. 26 - 28: Farm Progress Show
location: Boone, Iowa

Sept. 27 - 29: World Beef Expo
location: Milwaukee, WI

Oct. 1: MICHIGAN General Permit Renewal Applications DUE

Category 14 Test Dates at Purdue University—2014

September 4
October 7
November 4
December 9

EXAM PROCEDURES:
1. Location of exam: Stewart Center
2. Starts at 1:30 PM
3. Bring a government-issued photo ID
4. Exams are closed book, multiple choice
5. Only single-function calculators without printers are permitted. NO cell phones,PDAs or computers
6. Exam time limit: 90 minutes

LaGrangeCounty Pasture Walks

Pasture Walks take place from May through October every year, typically on the second Thursday afternoon of each month. The program is coordinated by the LaGrange County Soil and Water Conservation District. The SWCD schedules locations and provides transportation to and from the event.

Graziers from the area gather on grazing farms for an informal tour. The group, sometimes as large as 80 or small as 8, discuss anything that applies to farming. The host typically describes what he does on his farm, and the attendees ask questions or offer advice.

For more information contact the SWCD