



Management Solutions



Agronomic Solutions, LLC

Fall 2017 Issue

Our very own **Mandy Gangwer** is an avid bicyclist, participating in numerous cycling events. On July 29th she completed the 100 mile Amish Land and Lakes Bike Ride.

Mandy is the Michigan specialist in our office, as well as the person we all turn to when something goes “crazy” with our computers. She has been with Agronomic Solutions for 11 years and is basically our go to person with any questions when Melissa is out of the office.

We are all proud of her accomplishments. By the way, she has already passed the 1,000 mile mark for the year!



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

Fall To Do Checklist ...

Fall is a busy time of year with a lot of work to get done. Here is a quick reminder checklist to make sure everything gets done.

- Safely harvest crops
- Clean out and inspect manure storages
- Collect manure samples for analysis
- Spread manure at agronomic rates
- Calibrate manure spreaders
- Soil sample land application fields
- Spread cover crops on liquid surface applied fields
- Update manure spreading & operating records
- Sign up for NRCS EQIP contracts

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Value of Manure - Customer Averages ...

The charts below show the average manure value per acre.

Current Fertilizer Prices—Aug. 3, 2017

28% Semi- prepay	560# N / ton	\$225/ ton	\$0.402 / # N
11-52-0	1040# P ₂ O ₅ / ton	\$440 / ton	\$0.423 / # P ₂ O ₅
0-0-60 Semi	1200# K ₂ O / ton	\$332 / ton	\$0.277 / # K ₂ O

Swine Grower Pit			Dairy Lagoon		
N	32.2	\$12.94	N	7.4	\$2.97
P	20.5	\$8.67	P	6.2	\$2.62
K	26.3	\$7.29	K	12.2	\$3.38
	Per 1000 gal	\$28.90		Per 1000 gal	\$8.97

4000 gal / A = \$115.60 / acre

12,000 gal / A = \$107.64 / acre

Calf – Manure Pack			Duck—Liquid		
N	7.3	\$2.93	N	26.9	\$10.81
P	10.4	\$4.40	P	25.0	\$10.58
K	13.3	\$3.68	K	24.5	\$6.79
	Per ton	\$11.01		Per 1000 gal	\$28.18

15 ton / A = \$165.15 / acre

5,000 gal / A = \$140.90 / acre

Broilers (Layers) - Litter			
N	34.1 (34.1)	\$13.71	(\$13.71)
P	60.8 (85.6)	\$25.70	(\$36.21)
K	60.3 (60.3)	\$16.70	(\$16.70)
	Per ton	\$56.11	(\$66.62)

3.0 ton / A = \$168.33 (\$181.86) / acre

...now worth an average of \$146.58 / acre

Understanding Community Conflict ...

Janet Ayres

The expansion of CAFOs in Indiana has created high levels of conflict in communities, largely because people disagree over the permitting of operations, location of the facilities, and their impacts on the community. The stakes are high, and conflicts are emotionally charged. CAFO owners, other farmers, neighbors, and elected officials are pitted against one another, oftentimes damaging relationships for years.

CAFOs are private decisions that become public issues. As such, they have several distinct characteristics that make them complex and controversial.

- Private and public decision making
- Complexity of the issue
- Multiple stakeholders
- Role of the news media
- Public deliberation

Complex issues, such as CAFOs, have multiple sources.

In general, there are five major sources of public conflict.

- The amount and interpretations of data
- Power structures and responsibilities
- Existing relationships
- Discussing values rather than concerns
- Existing positions

A more constructive approach is a collaborative problem-solving process that brings people with different views together early on, before people are locked into their positions, to discuss the issues, exchange data and information, and search for solutions that go beyond their own limited perspective of what is desirable or possible. Elected officials' and citizens' understanding of CAFOs as public issues and the sources of conflict is only one component of a collaborative process.

Manure in the News ...

Dutch Designer turns cow manure into fashionable clothing

Manure really is worth its weight in gold

April 28, 2017, Eindhoven, Netherlands -

One Dutch artist is using chemistry to turn cattle manure into something that is both eco-friendly and valuable. Her innovative technique turns manure into a variety of useful materials like clothing fabric, bio-degradable plastic and paper.

Scientists around the world have made great progress in their attempts to recycle cattle manure, including turning it into natural fertilizer and biogas, but Eindhoven designer, Jalila Essaïdi didn't think they were efficient enough to solve the global manure surplus problem. Working in her BioArtLab, she discovered that cow manure provided both the base for a new, bio-degradable material and the chemicals required to produce it.

She started by separating the waste, with the dry manure used to extract pure cellulose from the grass that cows eat. From the wet manure, she extracted acids used to create cellulose acetate, a natural liquid plastic. This was used to make fibers, which are later turned into fabric or bio-plastics, but it can also be freeze-dried to create an aerogel.



The new material was named Mestic, from mest, the Dutch word for manure. Essaïdi claims that it has the same properties as plastic derived from fossil fuels, but is bio-degradable.

Last year, Jalila Essaïdi partnered with the municipality of Eindhoven to produce a fashion show using Mestic-based fabrics. Her Mestic couture collection was so impressive that clothing giant H&M awarded her the Global Change Award and a \$1 million prize. And just in case you're wondering, no, manure-derived clothes don't stink.

Essaïdi plans to increase Mestic production and work on making it usable in 3D printing. She also intends to use the material to build a bridge in her home city of Eindhoven to further showcase the versatility of this innovative invention.



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.*

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 your 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 out-sides of your field to reduce drift.

Oats are good if you seed them early and don't want to worry about killing them in the spring. Cereal rye is another good choice, especially when planted late in the season (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 sprayed 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.

Caution on Wet Hay ...

Hay baled and stored at a moisture level 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

AGRONOMIC SOLUTIONS, LLC

Melissa Lehman
7070 S 500 W
Topeka, IN 46571

Phone: 260-593-2092
E-mail: melissa@agronomicsolutionsllc.com



website: agronomicsolutionsllc.com

Coming Events ... PARP credits

Aug. 23 (Wed.) Pinney Purdue Field Day at Pinney Purdue Ag Center

location: 1 mile West of Wanatah on US 30, then North 1/2 mile on Co Line Rd. Watch for signs.

7:30—8:15 am CDT Registration, PARP Sign-up
8:15—9:15 CDT Welcome, Introductions
9:20—12 noon Tours & Program Presentations
12 pm Sponsored Pork Chop Lunch & Exhibits

Pinney Purdue Field Day Twilight Program

5:30—6 pm CDT Registration, PARP Sign-up
6—8 pm CDT Program Presentations

You can receive PARP at either the field day or twilight session (not both).

(PARP) credit—this is an opportunity to fulfill 1/3 of your of your Private Applicator Permit requirements (with payment of \$10 fee; bring license)

⇒ More info & directions at
www.agriculture.purdue.edu/pac/ppac/

Aug. 24 (Thur) Northeast-Purdue Ag. Center Field Day

Near Columbia City, IN. Organized by Purdue Ext.

Aug. 31: Davis-Purdue Ag Field Day

6230 N. State Road 1, Farmland, IN 47340

Manure Management Workshop Manchester University

604 E College Ave. North Manchester, IN 46962
August 25, 2017 - Registration 8:00am

PARP & Category 14 Points Available
Meeting Facilitator: Wabash Co. SWCD
Partnered with USDA and Eel River Initiative

8:00-8:15 Registration

8:15-9:15 Trish Waller Dunn, Office of Indiana State
Chemist. Speaking on Fertilizer Control.

9:15-10:15 Melissa Lehman, Agronomics Solutions.
Speaking on the Rules and Regulations.

10:15-11:15 Jim Camberato, Purdue U/Agronomy.
Speaking on Management of Nitrogen and Phosphorus

11:15-11:30 Curt Campbell, Purdue Extension Educator

11:30-11:45 Adam Johns, NRCS District Conservationist

Adjournment

Sept. 7, 8 am—12:15 pm

Purdue Agronomy Research Center Field Day

location: ACRE, 4540 US 52 West, West Lafayette, IN

